THE BUILDER

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"ARCHITECTURE" AND "THE BRITISH ARCHITECT"

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PAYMENT BY RESULTS

IF its purpose were not stated in the Preface it would be difficult to understand why the Report* on "The operation of the Payment by Results Scheme applied under the Essential Work (Building and Civil Engineering) Order, 1941, during the period July 1941 to March 1947" has been published. Notwithstanding the affirmation that "it was the opinion of many contractors that where the value of the scheme was appreciated, and it was operated with enthusiasm, substantial gains in output were achieved and costs reduced," the data in the Report are hardly such as to confirm this opinion or to lead one to any other conclusion than that the Payment by Results Scheme (which applied to certain war-time contracts) was an unfortunate necessity. There is little in the report that is likely to be of use to those who will now have to devise incentive payments to suit individual jobs under to-day's conditions. But the Report is intended only as "an historical record of the application of the Payment by Results Scheme . . . which was introduced by the Government as a measure to speed production in the war-time building and civil engineering industries, and an assessment of its success in achieving its object. It is not intended as a Government commentary on the general principle of payment by results in industry, nor does it claim to portray the results likely to be obtained by the application of payment by results to peace-time industry."

The test of any payment by results scheme must be whether it reduces the cost of the work either in money or in scarcity man-hours. When there is no scarcity of labour it is sometimes more economical to find employment rather than to pay out doles or unemployment insurance benefits. That is why bananas are still loaded by hand in the West Indies and why so-called relief works have sometimes been undertaken in this country at a most uneconomic cost. During war-time the younger and more virile part of the labour force was on active service, it was necessary to conserve man-hours and consequently any scheme that secured a better output could be justified on the grounds of necessity. From that point of view the scheme imposed by the Government on the building and civil engineering industries may be said to have achieved the desired result in that it secured an improvement on the abnormally low output of 1940. But there is nothing in the published Report to indicate that the scheme was the best that could have been devised in the circumstances.

One criterion of any successful payment by results scheme must be that it provides a sufficient incentive to spur the operatives on to greater effort. One is entitled to expect a remunerative output from every man employed, and in normal times and in a competitive world the remunerative output would have to be what we might term an "average high." In war-time, with only the older men and boys left in the industry, it might be an "average low." Therefore in normal times the basic output before bonus is earned might be high and the rate of bonus high; in war-time it would have been reasonable to expect the industries to fix a low basic output so that the "bonusable" level might be reached by the older and less efficient men, but in this case the bonus payments would obviously not be so high per piece as they would be with a higher basic output. We have heard it repeatedly said that in the spring of 1941, when general agreement had already been reached between the representatives of the employers and operatives on basic principles, the precipitate action of the Government resulted in the adoption of a scheme based upon a low basic output coupled with high bonus rates. It is therefore not surprising to learn that the scheme achieved one object, namely, that of increased output per man-hour above the "average low" then prevailing. It cannot, however, be seriously claimed that at the same time building costs were reduced.

One very unsatisfactory feature of the Government imposed scheme was the enormous superstructure of unproductive labour and supervision that was considered necessary to its operation. "To deal expeditiously with problems arising on sites, and to give guidance where there was little or limited experience in working the system, Regional Payment by Results Advisers were appointed by the Ministry of Works to cover the whole of Great Britain. These Advisers were qualified to give assistance in the practical application of the scheme and by close contact with the headquarters of the Ministry were kept conversant with the decisions reached from time to time on general principles and precedent cases of individual difficulty." In addition, trade union site officers, nominated by the National Federation of Building Trades Operatives, were appointed by the Ministry to deal with the special problems affecting labour on the larger war-time construction sites. It is stated in the Report that they made a valuable contribution to the smooth running of the scheme. "The onus of applying the scheme naturally fell upon the contractors' site staff, who were responsible for making weekly measurements of the work completed by each gang and allocating the time spent thereon for the purpose of computing the bonus earned. This work varied in extent with the type and size of contract and the organisation of the contractors concerned. In the large civil engineering jobs, where firms often had in existence systems of time allocation and weekly measurement for costing or bonusing purposes, the extra work involved in operating the scheme often lay in the actual computation and distribution of the bonuses. On the smaller building contracts, however, the system might be a complete innovation and would at first be a tax on the available staff. The success of the scheme was to a

* "Payment by Results." H.M.S.O. 6d. net. Code No. 70-534.

great extent dependent on adequate and efficient bonus staff, and this became increasingly recognised as the industry gained experience in the operation of the scheme."

Further, efficient inside staff was required, fully conversant with the details of the scheme and, if possible, resident on the site in order to be readily accessible to the operatives' representatives. The size of this staff depended upon the type of work involved and the layout of the site. It is claimed that on building sites it was found that one bonus clerk or surveyor could deal with the bonus computations of between 150 and 200 men, but this is probably a most optimistic view. So much paper work must now be undertaken by builders, applying for building licences and timber requirements, filling up complicated pay sheets with columns for guaranteed time, holidays with pay, P.A.Y.E., etc., that it is generally believed in the industry that one clerk is required for every six productive workers. How true this generally may be we cannot say, but it is certain that far too much time and money are to-day being expended on non-productive work not only in the building industry but in all British industries.

Elsewhere in the Report information is given which shows that some of the best bonused operations were those performed by unskilled labourers ; nevertheless, generally speaking the craftsmen earned higher overall bonuses because they were employed more continuously on bonus operations. "Taken over the whole of the men's working hours, the bonus earned was broadly 4d. per hour for craftsmen and 3d. for labourers. Taking the country as a whole, including those sites on which the scheme for various reasons was not fully applied, and embracing all men employed on these sites, including supervisory and welfare staff, the average percentage of bonus to basic wages paid in connection with the official scheme was fairly consistent within the region of 9 per cent." The workers in the industry had therefore been enjoying for several years a status increase varying from 2d. to 4d. per hour before the National Joint Council increased wages in 1946. When accused of permitting undue wage increases in a sheltered industry, building trades employers may well retort that these have been forced upon the industry as the result of Government intervention.

SHOP FRONTS AND GLAZING BARS

ALMOST unnoticed, a remarkable change has come over the appearance of shop fronts in our bomb-damaged streets since the end of the war. Most of the shops that lost their glass windows were perforce compelled to make do with a temporary repair that generally consisted of a small central glass area for display, with a generous surround of fibre board or other suitable filling. Many of these temporary repairs have been, and are still being, replaced by permanent fronts, and it is interesting to note that the big plate-glass window is rarely reinstated. The great majority of fronts make use of glazing bars with comparatively small panes of glass.

It is a nice study in the decorative possibilities of simple geometrical forms to note the variety of effects that are being obtained by the well-judged disposition of squares and rectangles of different sizes. Sometimes there is a combination of the two. We noticed recently a front in which the upper third consisted of vertical rectangles with squares equal to two rectangles below, and the effect was quite attractive. Such simple forms offer surprising scope for ingenuity in design.

Our shopping streets are regaining an almost eighteenth-century appearance, and most architects will agree that the change is all for the better. It is a truism that eighteenth-century buildings rely for much of their effect on the glazing bars of the windows, which echo the proportions of the elevation and preserve the harmony of the whole. Take away the glazing bars from a Georgian building and it immediately becomes a different thing. The life seems to go out of it. The windows no longer smile at you; they stare vacantly. It is strange that this object-lesson in design should have been so long ignored, to a very great extent, with regard to shop fronts.

The great expanse of plate-glass window is really a shopkeepers' fetish, often defeating its intended purpose of attracting attention by dissipating interest over a medley of conflicting exhibits. The sub-division of a large area into a number of small ones by means of glazing bars clearly helps to concentrate the attention, while on the æsthetic side it has an obvious benefit in reducing a shop front to more "human" proportions.

Many of our readers will recall the shop front controversy of the early years of the century when, owing to the insistence of the shopkeepers, large areas of plate glass were an almost universally accepted convention in the design of buildings for the retail trade. Wherever we turned we were presented with the absurd illusion of stone elevations, often replete with heavy classical colonnades and their decorative addenda, standing airily on large sheets of plate glass. The mind knew that there was a large steel girder or reinforced concrete beam taking the weight, but the eye was far from satisfied.

Various devices were tried to overcome this æsthetic defect, such as bringing the shop front forward as a decorative case and showing the structural piers behind. In some instances the whole weight of the building was taken on an internal structure and the elevations treated as suspended screens, but it is doubtful whether the problem has ever been solved to complete satisfaction. The fact is that notwithstanding the convention of large areas of glass which has become a characteristic of "modern" design, the eye is not satisfied by "empty" space; it wants something to rest on.

The restoration of glazing bars in shop fronts may be claimed to be a good thing from several points of view: They "break up" an aching void; they are decorative; they provide at least a more satisfactory appearance of support to a superstructure than does a large area of plain glass; they help to concentrate the attention of the shopper; and—a very practical advantage—they are economical when reglazing has to be done as a result of breakage.

For the time being a fairly general austerity of design appears to be the rule, consonant with the stern times in which we live; but later on, when times are better, there should be no objection to more elaborate designs. There is considerable scope for craftsmanship in shop front work, and many skilled joiners, for whom little employment is to be found in present-day building, would be glad to turn their attention under the direction of architects to attractive and useful work of this kind.

There will, we hope, in due course be full scope for the architectural *tour de force* in shop front design such as we find in the fashionable shopping thoroughfares of the West End; but for the time being, and certainly for the general run of bomb-damaged frontages, the skilful use of glazing bars provides street scenery of a more attractive and intimate kind than that to which we were generally accustomed before the war.

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The Grand Manner.

It is on occasions like the Royal Wedding that the question of the necessity of colour and pomp to the average human being tends to pose itself. It would seem that despite the "new lifers" there does exist in every human make-up a craving for a show of regality and colourful display; everyone, in fact, has a baroque side to him, for however mediæval such shows as royal weddings, coronations, etc., may appear to far-away aesthetes, there is in such pageantry the very essence of architectural splendour, from the impressive "Gothique" background down to the fantastic horse-drawn coach. Do such displays of human emotion on occasions like these, set in a background at once traditional and necessary for such happenings, give architects (and, in fact, all visual artists) any clue as to their task in exercising their art? The answer would chiefly be that the grand manner (a term which is in danger of becoming almost a *cliché*) is something very necessary to the continuance of any form of existence. A well-known architectural writer was recently pleading (when these things again become possible!) the value of a return to the baroque; as he put it: "The sins of that spasm of artistic creation hardly outweigh its now accepted virtues; an uninhibited freedom of emotional design, however decadent it may seem to the purists, produces architecture in terms of human grandeur; it is man-designed but involving the whole span of life's endeavour, music, poetry, painting and sculpture."

The baroque period is now a very long time distant, and in its time was really merely an overspill of the classic Renaissance, but there is no denying the fact that this extraordinary period of exuberance produced art of a tremendously vital character. In the light of such things as daylight factors, and the frenzied insistence on plain wall surfaces, it would seem virtually impossible to revert to things well past, but design, all design, would certainly not lose in quality if that spirit of exuberance which emanated from the baroque artists could be reborn in us to-day. Its twentieth-century form is possibly best exemplified in the work of some Swedish architects. Ostberg's Town Hall at Stockholm has a pronounced baroque flavour adjusted to his country's traditions; and much of Ivar Tengbom's work is magnificently free and adventurous. This decorative sense in design is necessary to the pursuance of a decorative way of life, and whatever new materials come on the market, and however rigorous the creeds of Continental extremists may become, people in generations unborn will still be appreciating individual design, and the work of individual artists.

The baroque—in the architectural sense—has gone, but the baroque way of life still lies not particularly dormant within us, ready to be brought to the surface on the least possible pretext. Some of our future architecture could echo this definite feature of the human make-up, if only to allow modern architecture to claim the right to be called "the new architecture of humanism."

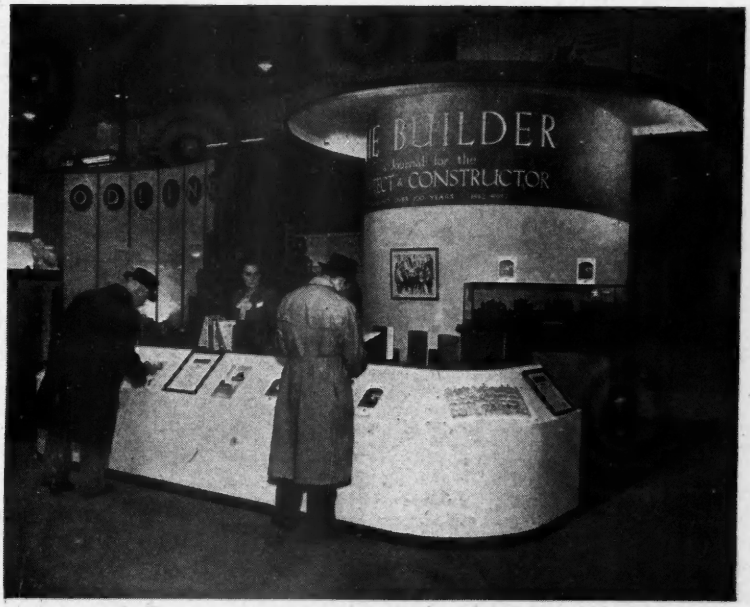
The Question of Training.

It was like hearing an echo out of the past to see in the "situations open" column of a technical paper the other day an advertisement for an articled pupil. How does this form of architectural education and training compare with its more recent brother—school training? The intimate nature of the older form of training was perhaps its greatest asset. At the end of his "time" the pupil had, for better or for worse, assimilated as much of his master's knowledge as the master had cared to impart to him, and also frequently quite a portion of the master's way of life. This usually resulted in the pupil becoming much the same type of architect as his master, for the profession fifty years ago was rather more insular than it is now. Modern school training is, however, nothing if not catholic in its application, and a student, after two years, can go out into the world lacking the personal touch, but not necessarily being any the worse for it. What, however, he is probably the worse for is a lamentable lack of practical experience; this, of course, is to come later, but in this department the articled pupil certainly came off best.

School training is really an outcome of necessity; the profession has grown so large in its field of operations that the pupilage system, if used to-day, would be quite inadequate as a method of producing architects. Mass instruction with as much personal touch as can be achieved is the order of the day in architecture, as in every other form of teaching. We do, however, look back with a certain amount of regret to those rather Dickensian episodes we frequently read about in the memoirs of the older school of architects—the terrifying chief and his terrified pupil; the hasty temper and the occasional rush of good humour. The schools, after this atmosphere, appear as rather blasé resorts to young architects-to-be, who not until quite a few years have passed realise that architecture is not all poster colour and peach black.

Homes for Old People.

A BILL which he described as "the coping stone on the structure of the social services of Great Britain" was introduced into the Commons on Monday by Mr. Bevan (Minister of Health), and given a second reading unopposed. The National Assistance Bill, as one of its provisions, empowers local welfare authorities to set up residential homes for aged and infirm persons—of mixed income groups. Mr. Bevan asked that the homes should be small—with not more than 25 or 30 old persons in each—because "bigness is the enemy of humanity," and there must be nothing institutional about them. The essence of the scheme was that those who occupied the homes should be of mixed income groups. To confine their use to the most indigent would destroy their character. Therefore, the local welfare authorities would impose a minimum charge of 21s. a week. Those who could not pay the full amount would be helped to do so by the new National Assistance Board, in such a way that there would be no distinction between those who paid the charges themselves and those whom the Board had assisted. The new homes, or "hotels" as he called them, could not spring up overnight. Their erection would depend on the development of the building programme, but equally they would be a contribution to the housing problem itself.



The Builder Stand at the Building Exhibition (Stand No. 125, Row G). An article on "What's New at the Building Exhibition" commences on page 622.

Seen above is Mr. P. Smallwood, Pres., L.M.B.A., at the L.M.B.A. Clubroom at Olympia, handing to the Rt. Hon. Charles Key, M.P. (Minister of Works), a copy of the history of the L.M.B.A., "Seventy-five Years On." Those in the picture (left to right) are: Mr. P. Smallwood, Sir Lancelot Keay (President, R.I.B.A.), Mr. G. A. Dean (Chairman, Central No. 5 Area), Mr. T. W. Pinion (Chairman, S.E. Area L.M.B.A.), Mr. G. H. A. Hughes (Director, L.M.B.A.), and the Rt. Hon. Charles W. Key, M.P. (Minister of Works).

Cambridge Preservation Society.

THE difficulties of obtaining the necessary licences from various Government departments and local authorities, states the eighteenth annual report of the Cambridge Preservation Society, have continued to be a limiting factor in the Society's efforts to catch up with the arrears of maintenance left over from the war years and to keep the agricultural estates in sufficiently good order to carry their due share of the burden of feeding the nation. However, the necessary licences were forthcoming for the fruit-packing shed and cold store in the Coton Orchard, which will be ready for the 1947 season. The cold store is of the latest type, and is believed to be the most up-to-date in East Anglia, and probably in the whole of England.

More disappointing was the refusal by the Ministry of Agriculture of their support for the rebuilding of Coton Forge. The County Rural Industries Committee drew the Society's attention to the importance which the Ministry of Agriculture and Development Commissioners attach to the place of the rural craftsman in the agricultural community, and asked the Society to consider the erection of new premises for the local blacksmith, who serves a considerable area. The Society was prepared to do all in its power to help the blacksmith in his important work of keeping great numbers of expensive and complicated farm machines in running order. Unfortunately, the Report comments, the Ministry of Agriculture, upon reflection, decided such work was not essential for the food-production campaign.

Architectural Science Board Lecture.

MR. R. LLEWELYN DAVIES, A.R.I.B.A., is the author of an Architectural Science Board lecture to be given at a meeting of the R.I.B.A. on Tuesday, December 2. Mr. Davies' subject will be "Choice of Structural Type and its Cladding," and he will deal with it under the main heads of research, development, and production. The meeting will begin at 6 p.m. Light refreshments will be provided at 5.5 p.m.

£5 Million City Textile Scheme.

PROPOSALS to rebuild the textile area in the City on a site of nine acres in the replanned area bounded by Aldersgate, Barbican, Red Cross-street and Cripplegate have been approved by textile industrialists. The estimated cost is £5,000,000, and the scheme comprises four large buildings, nine storeys high.

Speaking at a meeting at Beaver Hall, LORD HOLLENDEN, president of the Wholesale Textile Association, said that there had been no opportunity of discussing matters with the Government since the recent announcement of the need for reducing capital investments. He was hoping that in view of the necessity for attracting overseas buyers to London there would be no alteration to the scheme. "I am hoping that we shall get a high degree of priority for this very important scheme. The rebuilding of the whole of the City of London should have high priority, if only from the point of view of prestige," he added.

Preliminary planning has been undertaken by a committee under the chairmanship of Lord Hollenden, and it has been proposed that the textile centre should be owned by a corporation, in which all members of the trade requiring accommodation should take shares to assist in financing the scheme. A minimum of £500,000 is required as Ordinary share capital.

THE ARCHITECTS' TOMBOLA

What is a Tombola? Simply this, that you pay a guinea to a deserving cause and take a guaranteed prize. Speaking at Olympia on Wednesday, Sir Lancelot Keay, P.R.I.B.A., President of the Architects' Benevolent Society, said that many more tickets could be sold for the Tombola being run at the Building Exhibition if more prizes were available. Will you send a drawing, or a book, or anything people might value, to the Architects' Tombola, c/o R.I.B.A. Clubroom, Olympia, London, W.14, and so help a fine cause to help itself?

Mr. G. Corfe.

THOSE members of the building industry (and they are many) who study law cases, and to whom *The Builder* Law Reports are of more than passing interest, will hear with a real regret that Mr. G. Corfe has retired from his work at the Law Courts due in large measure to failing eyesight. It was in 1894 that the late Heathcote Statham (Editor, 1883-1910) entrusted Mr. Corfe with the work of reporting cases of interest to the building industry, and for over 50 years that task has been performed with accuracy and zeal. In a letter, Mr. Corfe writes: "I have always taken more interest in this side of my work than in any other in the Law Courts, and have considered it an honour to be the representative in the courts of such a great journal. To relinquish it now causes me great sorrow." We take this opportunity of publicly thanking Mr. Corfe for his many years of loyal service and of wishing him happiness in his retirement.

Northants County Architect.

NORTHAMPTONSHIRE COUNTY COUNCIL invite applications from Registered Architects for the appointment of County Architect at an initial salary of £1,100, rising by £50 annually to £1,400 per annum, inclusive of bonus. Details are advertised elsewhere in this issue.

New Nottingham Housing Architect.

NOTTINGHAM City Council have approved the appointment of Mr. Collis Atkin Pilkington, L.R.I.B.A., as Housing Architect, at a salary of £1,250 a year.

An Appointment.

MR. J. L. MORGAN, A.R.I.B.A., A.R.I.C.S., A.M.T.P.I., of the Portsmouth City Architect's Department, has been appointed Borough Architect at Swindon. Mr. Morgan was formerly in the Suffolk Architect's Department.

Industrial Design Appointment.

MR. MARK HARTLAND THOMAS, M.A., F.R.I.B.A., takes up an appointment as chief industrial officer at the Council of Industrial Design, Tilbury House, Petty France, Westminster, S.W.1 (tel.: Whitehall 6322), on December 1.

Obituary: Arthur Golding.

THE death has occurred at West Hartlepool of Mr. Arthur Golding, Borough Architect of West Hartlepool. He was 45, and before joining West Hartlepool Corporation in 1930 was assistant housing architect at Sunderland.

Architect's Will.

MR. HAROLD EDGAR JARVIS, of Darlington, architect, formerly of Rotherham, left £10,355.

The late Mr. E. J. Brown's Estate.

THE late Mr. E. J. Brown, a past-president of the National Federation of Building Trades Employers, left £29,932 (net personalty £29,689).

National Federation Annual Meeting.

THE annual meeting of the National Federation of Building Trades Employers will be held in the Liverpool Victoria Building, Bloomsbury-square, London, on Thursday, January 29, 1948. Owing to the restriction on public dinners, the dinner which the Federation holds each year on the evening previous to its annual meeting has been cancelled. Instead, there will be a reception and dance at the Dorchester Hotel.

Professional Announcements.

The partnership of MR. W. R. BENNETT, L.R.I.B.A., and MR. R. R. WILKINS, A.R.I.B.A., with Mr. A. J. HALE, L.R.I.B.A., has been dissolved, and Mr. Bennett and Mr. Wilkins will continue to practise as before under the title of J. STANLEY BEARD, BENNETT & PARTNERS, at National Bank House, 101/3, Baker-street, London, W.1. Mr. HALE will continue to practise under his own name from temporary offices at 44, Broxholme-rd., West Norwood, S.E.27 (telephone Gipsy Hill 2267).

MESSRS. LILLIE AND KIRKHAM, LL.R.I.B.A., chartered architects, have opened a branch office at 105, Fishergate, Preston, at which address they will be pleased to receive trade catalogues, etc.

MESSRS. COX AND HUGHES, M.B.E., A./L.R.I.B.A., National Provincial Bank Chambers, 21, High-street, Aylesbury, Buckinghamshire, announce that they opened their London office at 9, Old Burlington-street, Piccadilly, W.1 (telephone: Mayfair 3941), on November 25. Communications should, however, continue to be addressed to the Aylesbury office.

MR. ANDREW S. ROBERTS, A.R.I.C.S., has commenced practice on his own account as a chartered quantity surveyor at the temporary address of 55, Pall Mall, Westminster, S.W.1, and will be pleased to receive trade catalogues.

MR. P. G. BHAGAT, B.Sc.(Glas.), A.M.I.C.E., M.I.E.(India), has taken over the post of Director-General, India Store Department, at present located at Blackpool, from Mr. W. F. West. C.I.E., with effect from November 6.

From *The Builder* of 1847

Saturday, November 27, 1847.

One of the letters [from architects complaining of sharp practices by builders] made a statement to which we were not disposed in the first instance to give the slightest credit, as it reflected severely on the honour and honesty of a large body of men. It was to the effect that, when a limited number of builders are invited to send in, it is not unusual for them to agree among themselves as to who shall be the successful competitor, and then to send in merely nominal tenders, something over the amount named by the selected party. . . . They could scarcely think that they were practising a gross deception on parties who trusted them. . . . Let them refuse to tender in competition if they please, and can afford it—they shall have our praise for the refusal; but do not let them aid in making an architect believe that he has the conscientious opinion of several experienced men as to the cost of the work his employer requires. . . . Want of thought could alone lead right-thinking men to act thus fraudulently.

COMING EVENTS

Monday, December 1.

ROYAL INSTITUTION OF CHARTERED SURVEYORS. Mr. W. S. Goodbody, F.R.I.C.S., A.M.T.P.I., on "Problems of Estate Development and Management in the War-Damaged Towns." R.I.C.S., 12, Great George-street, S.W.1. 5.30 p.m.

ROYAL SOCIETY OF BRITISH ARTISTS. Winter Exhibition, Suffolk-street Galleries, Pall Mall, W.1. 10 a.m. (Continuing until January 17.)

THE SOCIETY OF ENGINEERS. "Water Supply Engineering," by Mr. Bernard Payne, M.S.E., A.M.I.Mech.E. Geological Society, Burlington House, W.1. 5.30 p.m.

Tuesday, December 2.

ROYAL INSTITUTE OF BRITISH ARCHITECTS. Architectural Science Board Lecture on "Choice of Structural Type and its Cladding," by Mr. R. Llewellyn Davies, A.R.I.B.A., R.I.B.A., 66, Portland-place, W.1. 6 p.m.

THE ARCHITECTURE CLUB. Dinner. Professor W. G. Holford to speak on the City of London Plan. The Building Exhibition, Olympia. 7 p.m.

LONDON MASTER BUILDERS' ASSOCIATION (North-Eastern Area). Special meeting on "Incentives." Mr. G. H. A. Hughes, Director, L.M.B.A., to speak. Cranbrook Hall, Ilford. 3 p.m.

L.M.B.A. CENTRAL NO. 5 AREA. Annual meeting. Guests: Sir David Robertson, M.P. (Streatham) and Mr. E. J. Smith, President, National Federation of Building Trades Employers. Zeeta Berkeley Rooms, Putney. 11 a.m.

Wednesday, December 3.

INSTITUTION OF HEATING AND VENTILATING ENGINEERS. Dr. A. M. J. Janser on "Moisture Retention." The Institution of Civil Engineers, Great George-street, S.W.1. 6 p.m.

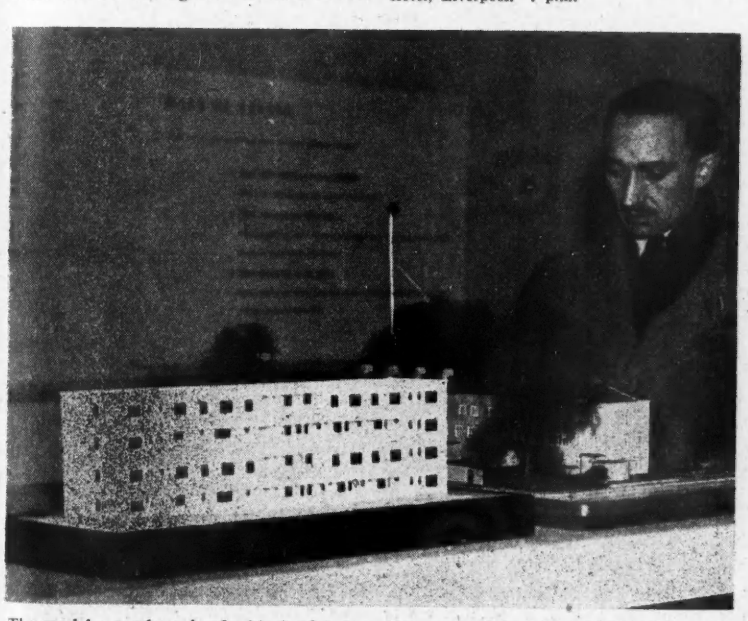
TOWN AND COUNTRY PLANNING ASSOCIATION. "Planning Development Abroad—Switzerland." Mr. Herbert Jackson, F.R.I.B.A., A.M.T.P.I. 28, King-street, W.C.2. 6.15 p.m.

Thursday, December 4.

DESIGN AND INDUSTRIES ASSOCIATION (LONDON REGION), in co-operation with HIGHGATE LITERARY AND SCIENTIFIC INSTITUTION. Mr. John Summerson, F.S.A., A.R.I.B.A., on "Georgian London." Highgate Literary and Scientific Institution, South-grove, N.6. 8 p.m.

TOWN AND COUNTRY PLANNING ASSOCIATION. Dr. Charles Hill, M.A., M.D., D.Ph., on "Health and Housing." 28, King-street, W.C.2. 1.15 p.m.

LIVERPOOL REGIONAL FEDERATION OF BUILDING TRADES EMPLOYERS. Dinner and dance. Adelphi Hotel, Liverpool. 7 p.m.



The model seen above is of a block of 4-storey flats, part of the Ministry of Health exhibit at the Building Exhibition. Other views of this, together with new type plans for flats and terraced houses, are reproduced on pages 616-620.

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

The R.I.B.A. Presidential Address.

TO THE EDITOR OF *The Builder*.

SIR,—Your leader on the President's address is a perfect performance. A worthy commentary on a fine oration.

IAN MACALISTER.

53, The Pryors, N.W.3.

Incentive Bonus Payments.

TO THE EDITOR OF *The Builder*.

SIR,—It was reported in your last issue that Mr. C. H. Walker, L.C.C. Housing Director, speaking at the Building Industries National Council at Folkestone on November 18, had stated that he looked forward to seeing the results of the (new) scheme for incentive payments in the industry. He admitted that nothing had impressed him more in the last two years than the absence in some men of the will to work, and tried to soften the blow by generalising and hoping that his remarks would not be interpreted as singling out building operatives.

Why not single them out? Whatever doubts the liberal-minded may have had concerning the lethargy of building workers must surely now be dispelled. What more proof is wanted than the production figures of the last 22½ months since the last increase of 4d. per hour (to skilled workers)? To me it appears as though preliminaries are being laid for someone to attempt to evade the gross travesty of good economics by giving a further 3d. per hour on the *minimum* rate, plus an added bribe of "being afforded the opportunities of earning not less than 20 per cent. extra (of the new rate)," as a supposed incentive to greater output.

In effect this is a general pay rise of 32 per cent.; the skilled mechanic in Central London will now be able to receive £7 13s. 9d. for a 44-hour week. It will not be long before this amount is demanded by, paid to and accepted by the operative as though it was his standard wage. Conversely, estimating surveyors will have to regard this same figure as a constant. At present frantic but haphazard attempts are being made to formulate some method of measuring and assessing bonus payments that could possibly be acceptable to all parties. Yet until at least regional unity on this point is obtained, the 32 per cent. rise—for such it is—will have to be paid without any means of ensuring *pro rata* increased production, or else builders will lose what few men they have got.

Such fiascos have occurred before, and we have learnt that no measurable increase of output will be obtained. There will be some sectional conscientious effort at the outset, only to be stifled by the stalwarts showing the newcomers the "ropes," not to mention the swarms of agitators who throw off their subtle guises of apathy and grasp every occasion extra work is mentioned to demonstrate and spread class hatred. It remains an undoubted truth that the old axiom relating to too many men for too few jobs is still a cold, hard fact. History is again proving that any attempts to appeal for co-operation are futile and are, in fact, interpreted as a weakness by those offering terms of co-operation.

What wise and learned body of men decided that the late autumn and the early winter produced typically seasonable weather for a production drive? Short hours of daylight, fog, rain, sleet, snow, frost and high winds have never struck me as being conducive to zealous effort.

As of old, the private building owner, and eventually the public, will have to pay the increase on competitive work that was our only hope of better output, and local authorities and other governmental owners will have a sound excuse for increased staffs to deal with the new sets of forms that will have to be distributed to allocate the adverse balance to the manifold departmental chiefs who deal with "council" rents, local rates, county rates, tax collections (direct and indirect), and the War Damage Commission.

I foresee that many old kits of building craftsmen's tools will shortly be cleaned up for re-use now that a bricklayer can obtain about the same wages or salary as a grade III (Civil Service) clerk of works.

H. E. CAMPBELL,
Clerk of Works.

Islington, N.1.

House Repairs and Licences.

TO THE EDITOR OF *The Builder*.

SIR,—In *The Builder* for October 24 there appears an account of a case heard at Stratford Court on October 15 in which it was asserted that if a person wished to paint or repair his own house it was incumbent upon him to apply for a building licence, as the licensing authorities took into consideration the value of the labour which a man puts into the work, in addition to the value of the materials to be used.

This case was the subject of a question addressed on November 13 to the Minister of Health, who made reference in his reply to paragraph 2 of Ministry of Health Circular 8/47, issued on January 20, 1947.

It clearly appears from this paragraph, and from Appendix "B" which accompanies the Circular, that the limitation of the cost of the work in the licence should apply to the value of the materials only, thus avoiding any attempt at estimating the value of the services to be rendered by the unpaid labour, which would otherwise be necessary in order to arrive at the total cost or value of the licensed work.

D. MALLAM, Director.
Federation of Associations of Specialists and Sub-Contractors.
Dacre House, Arundel-street, W.C.2.

The "Reilly" Scholarship.

TO THE EDITOR OF *The Builder*.

SIR,—I feel sure that many students of the Liverpool School of Architecture will agree with me that the foundation of a "Reilly" medal and scholarship will give universal satisfaction.

In honouring the names of distinguished personages in this way, it has invariably been the procedure to raise funds as a tribute to their memory. Sir Charles Reilly, I am thankful to say, is still with us, and some suitable appreciation in the form of a Reilly scholarship, for the benefit of budding architects, will gladden the heart of my old professor, who made the Liverpool School by his remarkable gifts, untiring enthusiasm and love of his many students.

GORDON HEMM
(a former student).

30, Scarisbrick-avenue,
Southport.

COMPETITION NEWS

Naval Auxiliary Memorial, Liverpool.

In our issue last week the closing date for the competition for a proposed Naval Auxiliary Memorial, Liverpool, organised by the Imperial War Graves Commission, was incorrectly given. The closing date is January 16, 1948, *not* February 16, as stated.

"COMMONLY KNOWN AS PERPENDICULAR"

FOREMOST in the mind of the author of "Gothic England"* is what he calls "our mature architectural style, commonly known as Perpendicular"; but he touches upon nearly every subject under the sun, and shows us a rare parade of learning. There is a hint on page 3 that he has considered "the record of human history over a period of some fifty or sixty centuries," and the preface lays stress upon the width of his researches.

Readers' hopes might well run high; but, unhappily, we learn at the start that we are not to expect clear reference either to the source of what is fact or to the authority for opinion. We can but turn to a section headed "Notes to the Text," which is merely a list of pages, and the following is an example of its contents :—

"P. 55. Farleigh—DSC 151 note."

We must now refer to another section headed "Abbreviations used in the notes," where we find :—

"DSC. W. Dodsworth: *Salisbury Cathedral*, 1814."

If we have Dodsworth's book handy, we can look up the note on page 151, and see if he supports Mr. Harvey on Farleigh; but for what the author says, on the same page, about half a score other men and buildings there is no reference given.

In respect of architecture, the book yields a number of comments and opinions on highly controversial matters; but there is little to suggest as much to the general reader for whom, it is said, the book is meant. The reader should be warned that the men whom Mr. Harvey calls "architects" were never so-called in life, and there is no evidence of their ever having used "designs" similar to those of modern experience. Furthermore, buildings, poetry, music and paintings that excite Mr. Harvey's admiration are not necessarily evidence that the period of their making was one of particular merit. It may also be said that thirteenth-century craftsmen were not, as alleged on page 155 (without any authority), "responsible for keeping accounts." Such statements are very misleading.

The author attaches too little importance to the difference between facts and conjectures. He speaks of such men as Yevele as if we had their authentic life stories, whereas very little is really known of them. His method might more properly be applied to a study of men of recent times, whose works and predilections are common knowledge. There is no attempt at careful criticism of mediæval facts; but, on the contrary, much that is trifling. Such phrases as "the ripened perfection of English Gothic," and words like "educable" and "æsthetician" are not admirable. The so-called "fourth dimension" described as "æsthetic space" is art nonsense, and is by no means alone in that category.

At a high cost in time and labour Mr. Harvey has undoubtedly amassed a great quantity of material; but he should have given it to us steadily, patiently explaining whence it came, and, when arguing from it, laying it openly before us. A medley of chatter about architecture, painting, poetry and music, bringing in scraps of nearly everything from Egyptology to atomic research, is of small value. The author's ideas seem to have been rushed helter-skelter into print, dragging along with them a lot of unnecessary stuff in the scramble, instead of having been carefully marshalled in suitable order. His recent article on fourteenth- and fifteenth-century painting† shows how well he can present his researches if he choose, and whenever he has any new facts on which he can reasonably enlarge, his attempt will be sure of a welcome.

If, in a study of fourteenth- and fifteenth-century building the author could clearly and reasonably support an argument that the masons of those times were superior to their predecessors, he would gain the interest and respect of the reader. Art talk about tracery, mouldings, liernes, the "uprush" of mullions, and extravagant language in praising admired work do not carry much weight.

There are too many books about mediæval building that lack reasoned discussion, and additions to their ranks should be discouraged. We close this one with regret; but with the hope that the author will one day make more cautious use of the material which he has so patiently assembled.

The illustrations are admirable and excellently reproduced. Both author and publisher may justly be proud of them. They make the book a treasured possession.

J. G. NOPPEN.

*"Gothic England." By John Harvey. (London: B. T. Batsford, Ltd.) £1 1s. net.

LANDSCAPE ARCHITECTURE AND HOUSING

TALK AT A HOUSING CENTRE

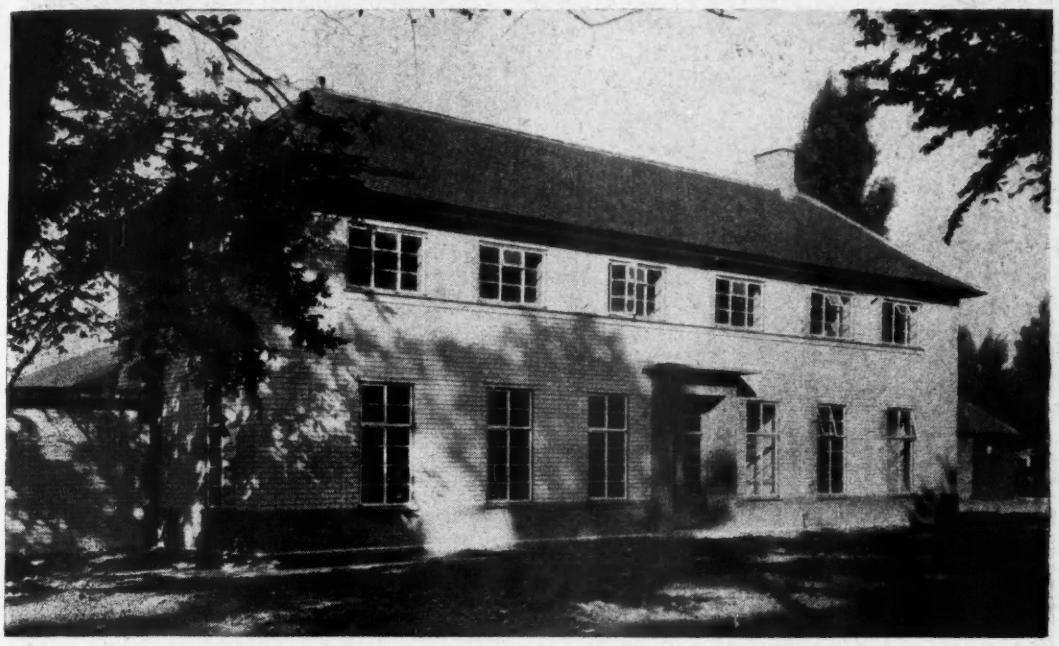
A MEETING of the Housing Centre was held on November 11, when MR. G. P. YOUNGMAN gave an address on "Landscape Architecture and Housing."

Mr. Youngman said a housing estate might meet every utilitarian consideration and yet not give an idea of being a good place to live in, because the satisfaction found in any place was largely visual. Hence the landscape approach was of value. A geometric pattern for a building site was bad, because it did not allow for natural features, such as undulations of the ground. Nor would planned irregularity for its own sake do. The alternative was the landscape approach, analysing the quality of the site and its surroundings.

If you grasped a site's individuality you had the basis of a site plan; and if you emphasised and enhanced that individuality something of character would emerge. Landscape designing on a large scale was not an affair for the drawing-board. Detailed accurate drawings should be made, but the imaginative seeing of a design must be worked out on the ground.

The landscape architect was concerned with the total scene, and he must work with other professions. What was wanted was not a balance of conflicting forces so much as an integration of different forces working together to a common end. The corridor street was beginning to go: traffic and buildings were beginning to be dissociated. We should no longer think of houses as lining a street, but as being set among gardens. The street side of the house should be the utility side. To it should be transferred washing, dustbins, coal-sheds, garages, etc. The kitchens should be there, and a small yard. The street should become a service street, something in the nature of a private drive serving a small group of houses. The other side of the house would open on to the garden, and have footpath access. The individual garden would be cut down and the space saved used for allotments, public gardens, children's playgrounds, tennis-courts, etc.

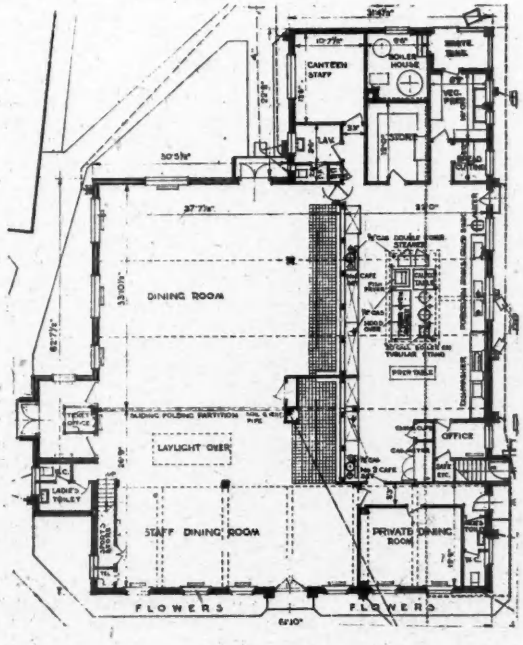
† *Burl. Mag.*, Nov., 1947.



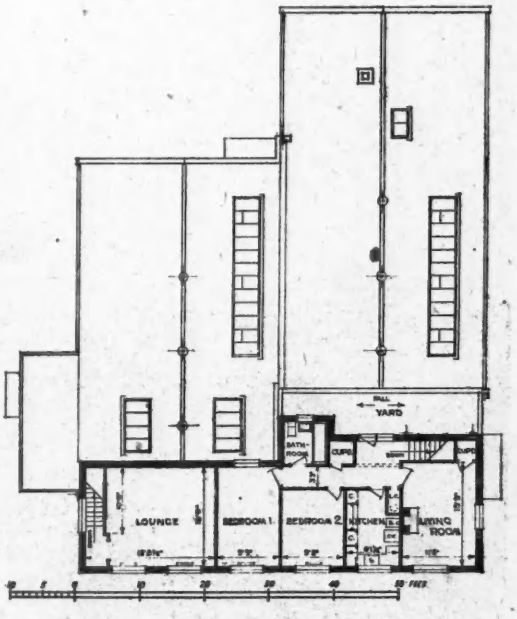
The Entrance Front.

NEW CANTEEN FOR JOHN LAING AND SON, LTD., MILL HILL

D. A. ADAM, L.R.I.B.A., AND SYDNEY GREENWOOD, A.R.I.B.A.,
ARCHITECTS TO THE COMPANY

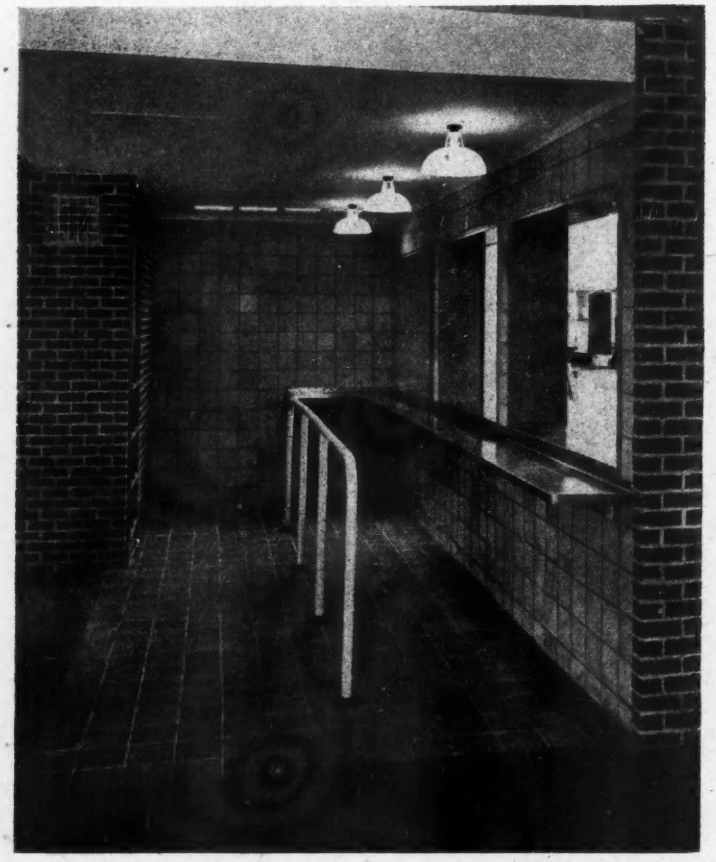


Ground-floor Plan.



First-floor Plan, Showing Staff Flat.

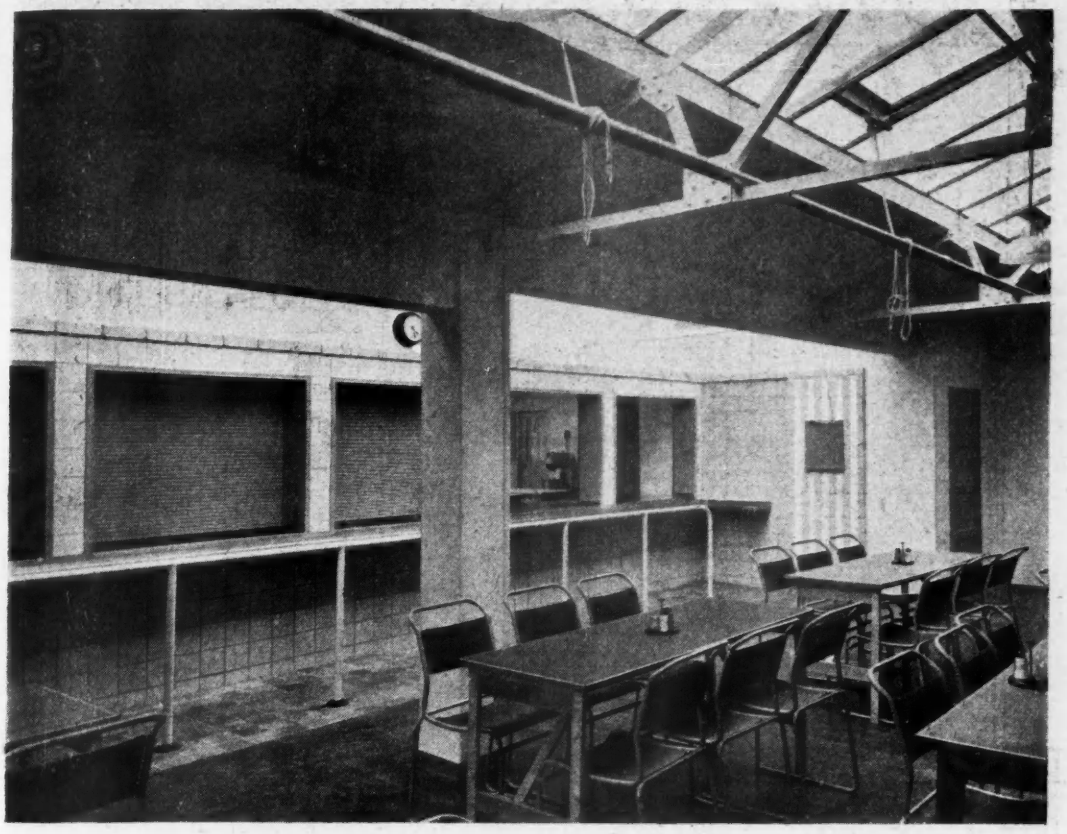
The Staff Dining-room. *Below*: Service for Staff Dining-room.



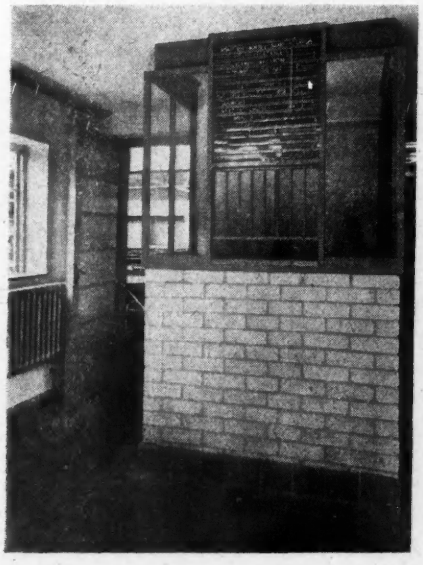
NEW CANTEEN FOR JOHN LAING & SON, LTD.

THE NEW CANTEEN BUILT FOR THEIR head office staff by Messrs. John Laing and Son, Ltd., overlooks Page-street, Mill Hill, and is faced with Uxbridge flint bricks. At the main entrance is a kiosk fitted with an "Automaticket" machine, which issues tickets according to the intended purchases, which can be determined from the priced menu-board displayed over the cash grille. The dining-hall is divided into two parts by a folding partition—one part being for the general staff and the other for the executive staff. Floors are in brown "pitchmastic," with quarry tiles at the counter gangway. The ceilings are lined with "Tentest" board distempered cream, walls are of a similar colour, and woodwork painted greyish-blue. Chairs are in tubular steel. Electric clocks, radio, dictagraph apparatus and telephone kiosk also form part of the equipment.

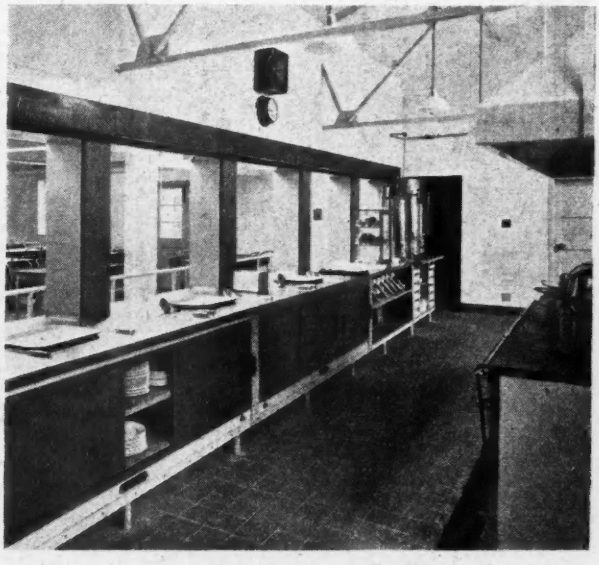
The kitchen itself has white-tiled walls, with floor laid in red quarries. Much of the kitchen equipment is electrically operated—including a dish-washing machine. The building work was carried out by the company, and the canteen sets a high standard in works welfare.



The Main Dining-room, looking towards Kitchen Service.



Ticket Kiosk.

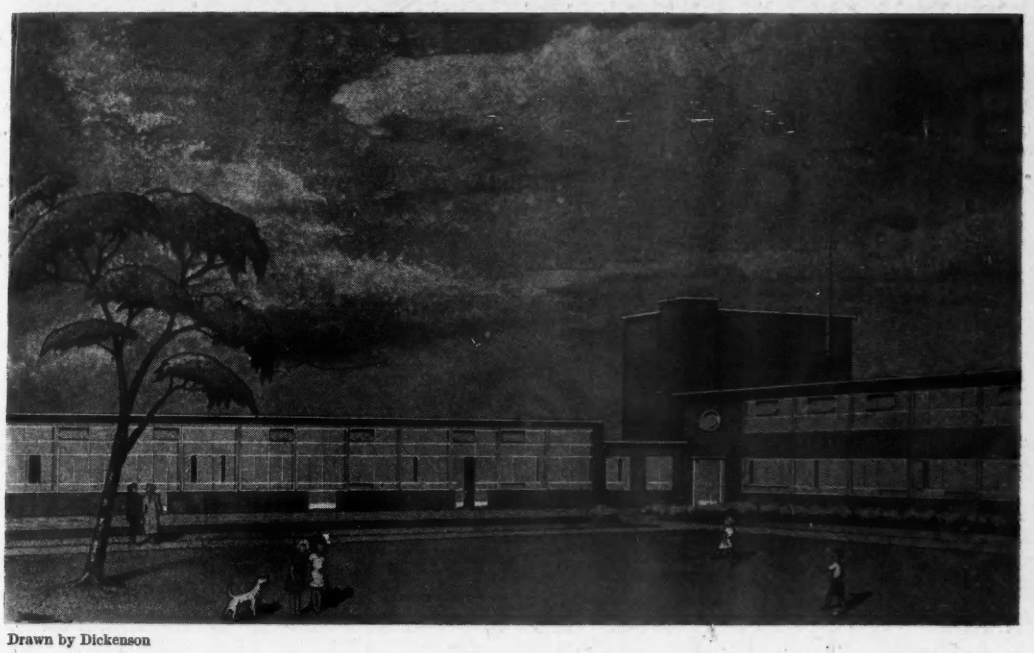


Service Counter, from the kitchen.

NEW CANTEEN FOR JOHN LAING AND SON, LTD., MILL HILL

D. A. ADAM, L.R.I.B.A., AND SYDNEY GREENWOOD, A.R.I.B.A., STAFF ARCHITECTS

COUNTY PRIMARY SCHOOL, REDHILL-ROAD, CHISLEHURST. The Plan.



Drawn by Dickenson

COUNTY PRIMARY SCHOOL, REDHILL-ROAD, CHISLEHURST, FOR KENT EDUCATION COMMITTEE

THE SCHEME DESIGNED BY SIDNEY LOWETH, F.S.A., F.R.I B.A., KENT COUNTY ARCHITECT, AND R. T. GREEN, F.R.I.B.A., ARCHITECT IN CHARGE OF SCHOOL BUILDINGS

G. I. BIDWELL, A.R.I.B.A., AND GARNHAM WRIGHT, A.R.I.B.A., ASSISTANT ARCHITECTS

THIS NEW SCHOOL IS TO BE ERECTED IN REDHILL-road, Chislehurst, to serve the rapidly developing area of Chislehurst-Sidcup. The school is planned in two departments, a junior mixed department for 340 children and an infants' department for 300 children. Provision has also been allowed for adding a nursery unit at a later date. The junior department will have seven classrooms of 520 sq. ft., and two general purpose rooms of 700 sq. ft., whilst the infants' department will have six classrooms and two general purpose rooms.

Owing to present-day conditions and the difficulties of obtaining materials and labour, the buildings will have to be completed in stages. The junior department and canteen will be erected in the first instance, followed by the infants' department and then, as soon as materials are available, the assembly halls. There is a fall across the site from north to south. The building has been planned as far as is possible along the contours, thereby allowing each classroom wing to be on one level. Classrooms all have a southerly aspect, each classroom having direct access to a paved area which can be utilised for outdoor teaching if and when required. Each department has its own administrative wing consisting of head teacher's room, staff room and cloaks, the medical inspection and waiting rooms.

The assembly halls have been so planned that they can be thrown into one large hall when required to serve community purposes. The public can have direct access to the halls without having to go through the schools. Provision will be made for the halls to be wired for wireless, and for the showing of educational films. Special attention is being given to the acoustic properties of the halls. The canteen is placed to the north-east of the site, where direct access can most readily be obtained for service vehicles. There are to be separate dining-rooms for the juniors and the infants. The dining-rooms have been planned to allow of extension.

The construction of the buildings will be of steel framing with brick infilling to the walls. Large windows form one side of every classroom with a clerestory window on the corridor side giving adequate lighting in the rooms. Flooring generally will be in a jointless composition, according to the availability of materials at the time of erection. Roofing will be of a light aluminium structural unit supplied by Messrs. Briggs, and finished with bituminous felt.

The scheme was designed by Mr. Sidney Loweth, F.S.A., F.R.I.B.A., Kent County Architect, and Mr. R. T. Green, F.R.I.B.A., architect in charge of school buildings, with Mr. G. I. Bidwell, A.R.I.B.A., and Mr. Garnham Wright, A.R.I.B.A., assistant architects.

The consulting engineers are Messrs. J. Stinton Jones and Partners.

HOUSING PLANS PREPARED BY THE MINISTRY OF HEALTH

THE Ministry of Health's exhibits at the Building Exhibition have been designed with a two-fold object: (1) to show types and examples of post-war houses, and (2) to suggest lines on which house planning for high density areas may possibly evolve in the future.

THE PRESENT: Exhibits in the first group show, by means of models or photographs, representative examples of the traditional and non-traditional types of houses which local authorities, in partnership with the building industry, have provided since the war. Photographs are also included of the temporary houses of the bungalow type.

To emphasise the link between housing and vital forms of production the Airey Rural house and the permanent aluminium bungalow for mining areas are featured. Components for 20,000 of the Airey Rural houses have been ordered by the Government. A full-size section of a corner of the house is shown to illustrate the constructional simplicity. There is also a model of an Airey house with the walls transparent, indicating the interior layout. There is another model of a complete pair. In addition, a large model (a photograph of which is shown on facing page) shows how these houses can fit comfortably into a village landscape. There are photographs of both exterior and interior views.

Of the permanent aluminium bungalows for mining areas, 15,000 have been ordered. They are delivered to the site in four complete sections. A model of the bungalow and photographs of the interior show its character and the kind of equipment with which it is fitted.

There is also a set of three models of typical interiors of local authority houses based upon three ways of living. These are:

(1) The kitchen-living room, popular in rural districts.

(2) The working-kitchen, which finds favour in towns (the kitchen in this case is used only for cooking and laundry, meals being eaten in the living room).

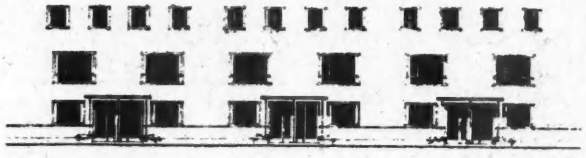
(3) The dining-kitchen, devised for families who prefer to have their meals in the kitchen. (In these cases a larger kitchen is provided.)

THE FUTURE: With the aim of stimulating discussion and interest within the architectural profession and the building industry a small number of new house plans which have so far not passed beyond the drawing board stage are illustrated. They include a scheme for 4-storey maisonettes; a model of a block of these is shown, together with a section of the block to a larger scale, featuring the internal arrangements. The underlying idea is to meet the desire among many

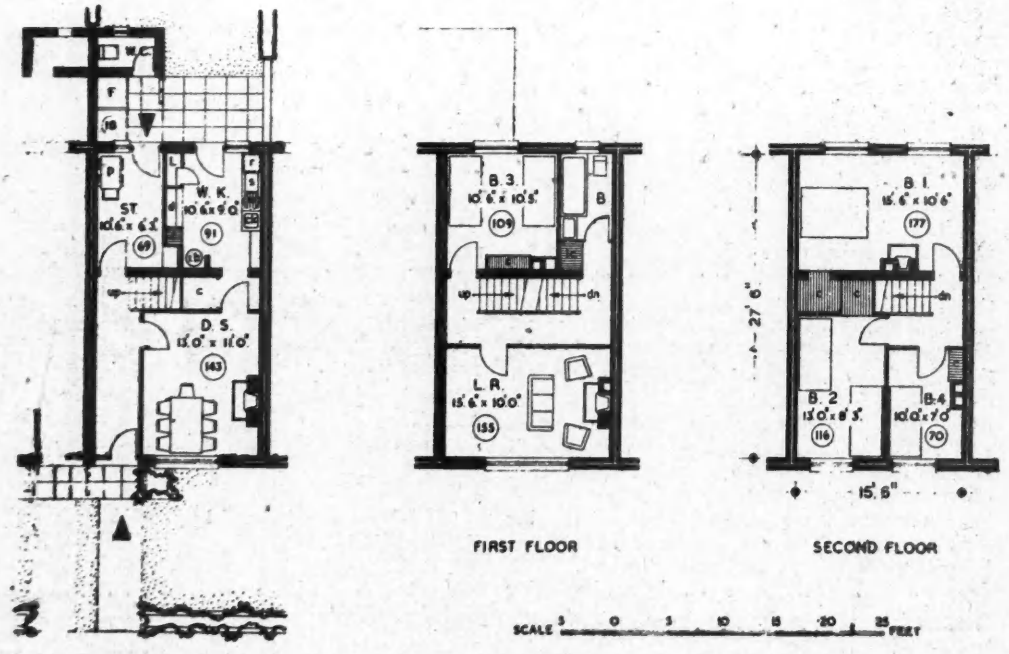
THREE STOREY TERRACE HOUSE

SEVEN PERSON · W.K. · SOUTH ASPECT

15' 6" FRONTAGE. FLOOR AREA - 1210 SQ. FT.



ELEVATION TO THE ROAD



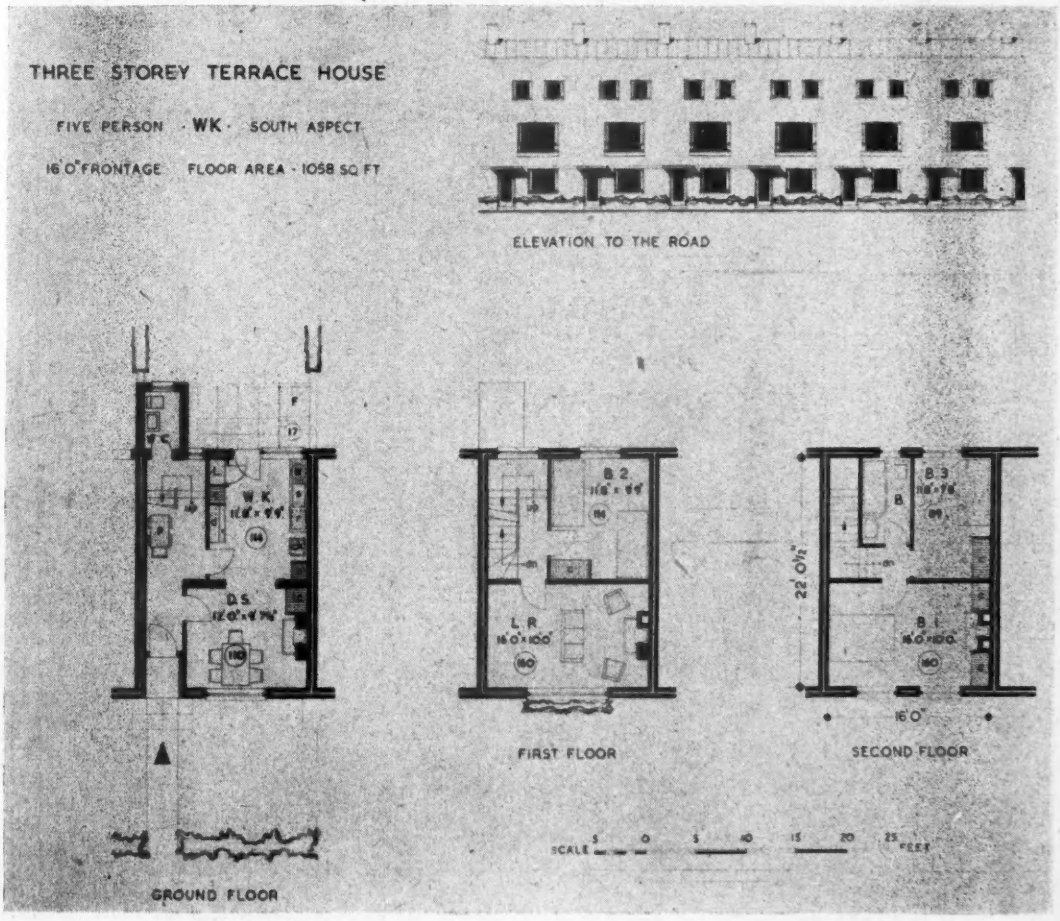
GROUND FLOOR FIRST FLOOR SECOND FLOOR

THREE-STOREY TERRACE HOUSE. 7-person, with Working Kitchen, South Aspect.

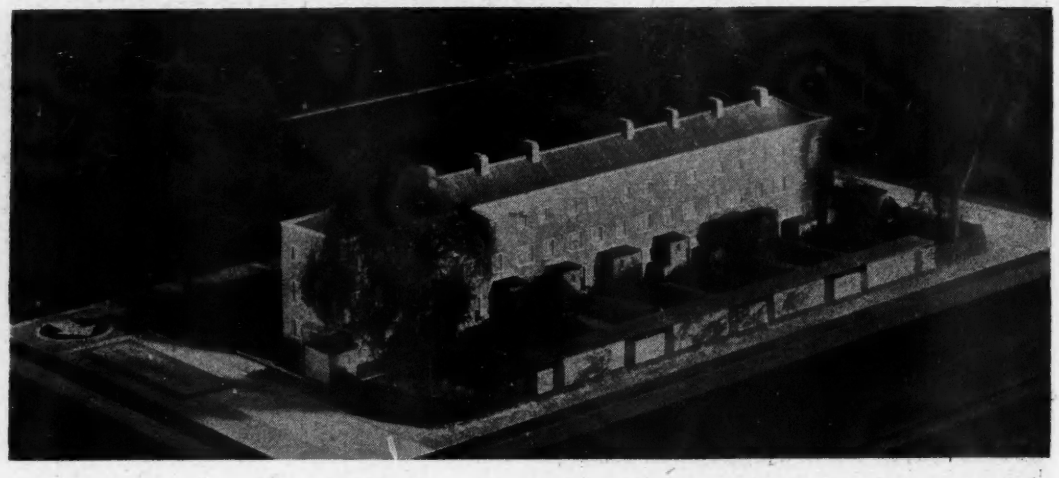
MODEL, showing how "Airey" houses fit into a village landscape.

people for a house with the convenience of a flat. At the same time, it provides a suggestion for building in high density areas where accommodation is needed for childless couples or those with near-grown-up families. Three ideas are also shown for the planning of 3-storey town houses for families of five or more, which continue the tradition of urban building and town planning. There is a model of a terrace of 10 of these 3-storey houses with drawings showing the interior layout of the individual houses.

The Ministry's exhibits form part of a joint exhibit with the Ministry of Works of the Department of Scientific and Industrial Research. The design and layout of this joint exhibit have been carried out for the Departments by the Central Office of Information.



THREE-STOREY TERRACE HOUSE. 5-person, with Working Kitchen, South Aspect.

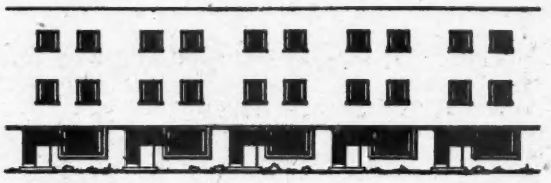


Model of 3-storey Terrace Housing.

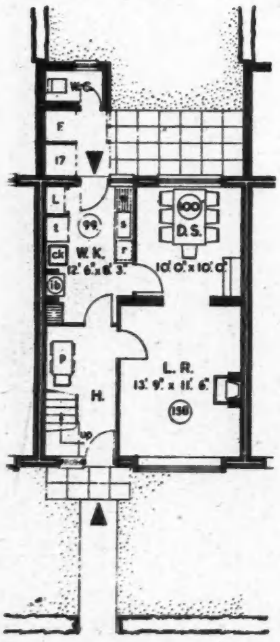
THREE STOREY TERRACE HOUSE

SEVEN PERSON · W K · EAST WEST ASPECT

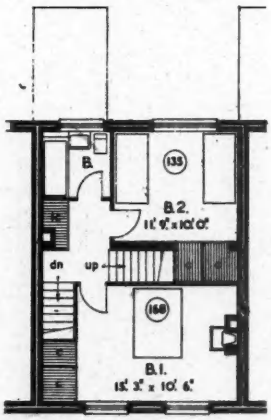
18' 6" FRONTAGE. FLOOR AREA - 1161 SQ. FT.



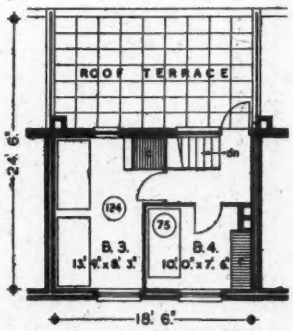
ELEVATION TO THE ROAD



GROUND FLOOR



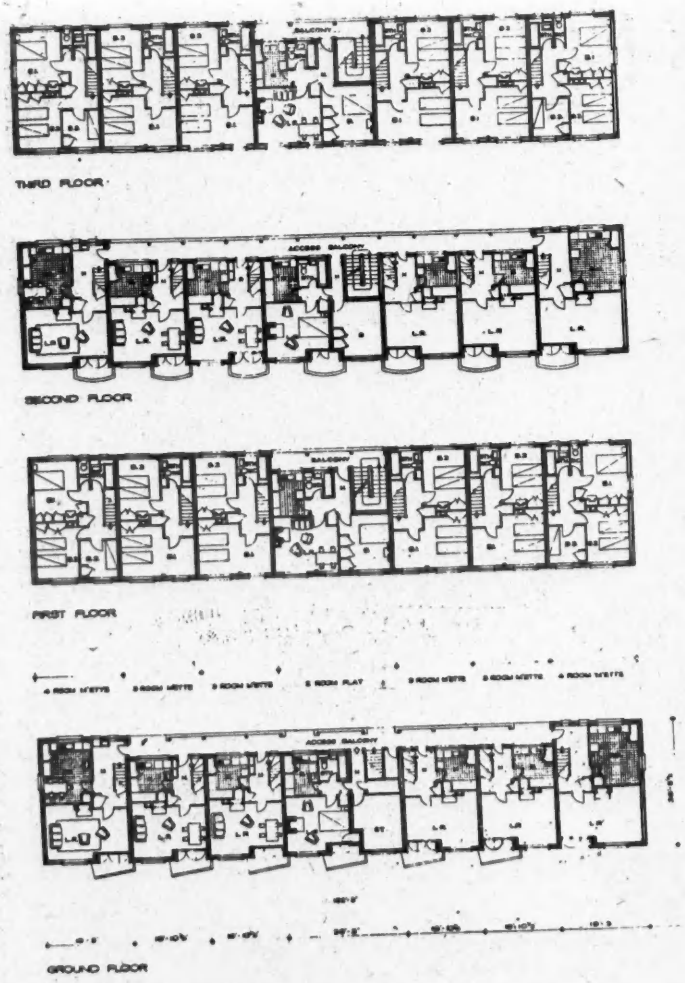
FIRST FLOOR



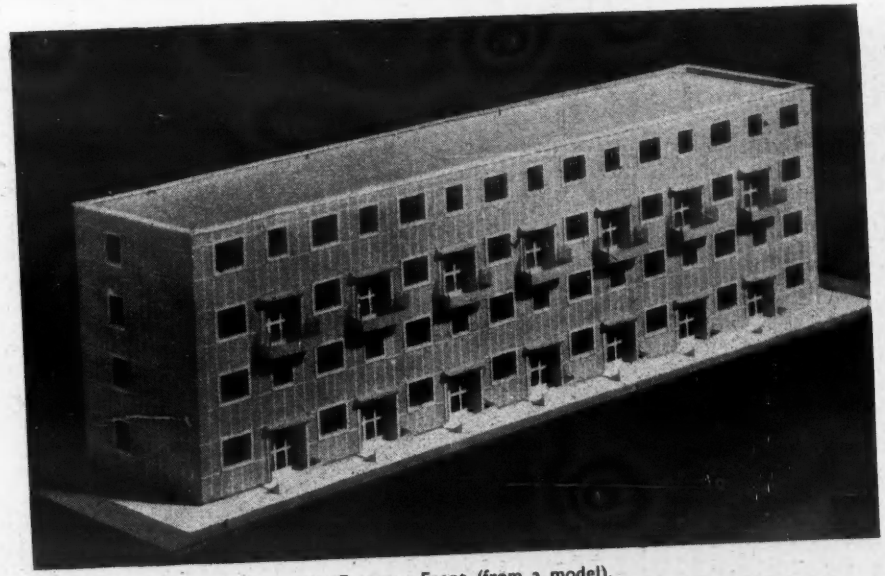
SECOND FLOOR

SCALE 5 0 5 10 15 20 25 FEET

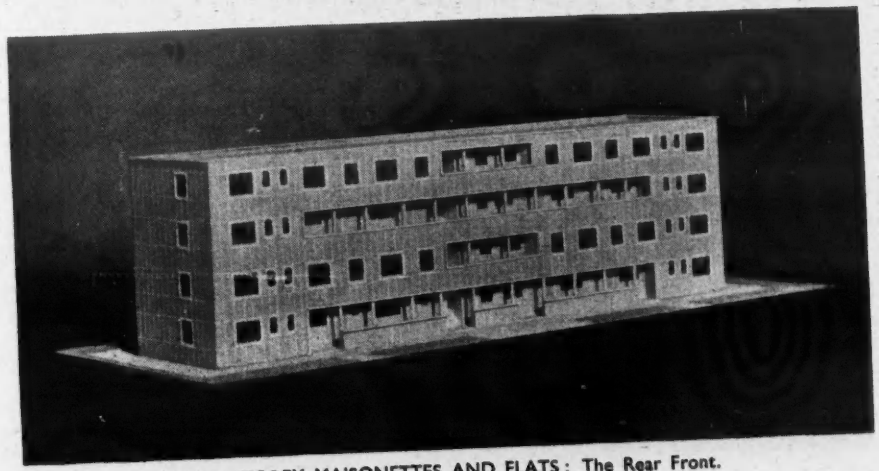
THREE-STOREY TERRACE HOUSE. 7-person, with Working Kitchen, East-West Aspect.



FOUR STOREY MAISONETTES AND FLATS



The Entrance Front (from a model).



FOUR STOREY MAISONETTES AND FLATS: The Rear Front.

THE TOWN PLANNING INSTITUTE

PRESIDENTIAL ADDRESS

GENERAL observations on broad questions of planning policy and the effects of the Town and Country Planning Act were made by MR. J. R. ROBERTS, C.B.E., in his presidential address to the Town Planning Institute, on November 13. He said :—

The ever increasing importance which is being directed towards efficient town planning makes it of the utmost importance that those responsible for technical advice to their authorities in this matter should be men of first-class ability with the highest possible qualifications and, as a profession, have open to them the highest appointments which the local government service can offer. If, in embarking upon it as a profession, they were to do so with the knowledge that the highest appointments might as a matter of increasing practice be filled by lay administrators, it might well be that, in course of time, this would have a serious adverse effect upon the quality of the men entering the profession. It might well prove to be the case, therefore, that the adoption of the Minister's suggestion (that it need not be regarded as an essential qualification for the leader of a planning team to be himself a qualified planner) would in course of time weaken planning staffs of local authorities rather than strengthen them.

Apart altogther from these considerations, it would appear that the profession of town and country planning of necessity demands from the officer in charge of it a technical knowledge of its many aspects which no lay administrator, however able, could possess. The dealings which are involved with technical and professional men, whether they be architects, engineers or surveyors, representing not only other authorities but also private interests, make it particularly important that the chief officer by whom these negotiations must frequently be personally conducted should himself possess technical qualifications which would enable him to talk on equal terms with those with whom negotiations were taking place.

Keep Both Feet on Ground.

I cannot conclude this address without once more referring to an aspect of planning to which I have more than once drawn attention. Every planner should be a man of vision and high ideals—of that there can be no doubt, but the idealist can do much to destroy the hope of those ideals ever being realised unless at the same time he keeps both his feet firmly on the ground and pays due regard to what is practicable from the purely economic and sordid financial point of view. The ideal, with the possible exception of the creation of a new town on virgin soil, is one which can only be achieved in stages. The possibility of sterilising wide areas of urban development because of an ultimate aim to change the form of user to accord with the more perfect plan is a matter which I think the planner is sometimes tempted to overlook. An immense amount of highly qualified technical skill can be absorbed and an enormous amount of time taken up in the considering and working out of proposals which cannot under any circumstances be brought to fruition within a period of the next 50 years. The economic state of this country at the present time, the shortage of planning staff and the urgent necessities of redevelopment of areas which have been severely damaged in the course of the war make it a matter of vital necessity to deal with present needs rather than distant ideals. In saying this I do not wish it to be imagined that I am urging a short-term policy which would be prejudicial to the ultimate achievement of an ideal. One of the main objectives of planning under the difficult present-day conditions should be to ensure that the development which is now taking place is all directed toward the accomplishment of the long-term plan. What I therefore urge is that every plan should be capable of development stage by stage.

The new epoch from the planner's point of view which has been opened as a result of the passing of the Town and Country Planning Act of this year is almost unlimited in its scope. The effect of the fundamental changes in the law which have recently been made, particularly as regards development rights, must all tend to the easing of the financial burden on planning authorities, but I am sure, competently advised, they can be relied upon under the general direction of the Ministry to use these new powers wisely and resist the temptation to embark upon extravagant and costly schemes which might have the effect of curbing rather than stimulating the commercial and industrial development which is so vital to this country at the present time.

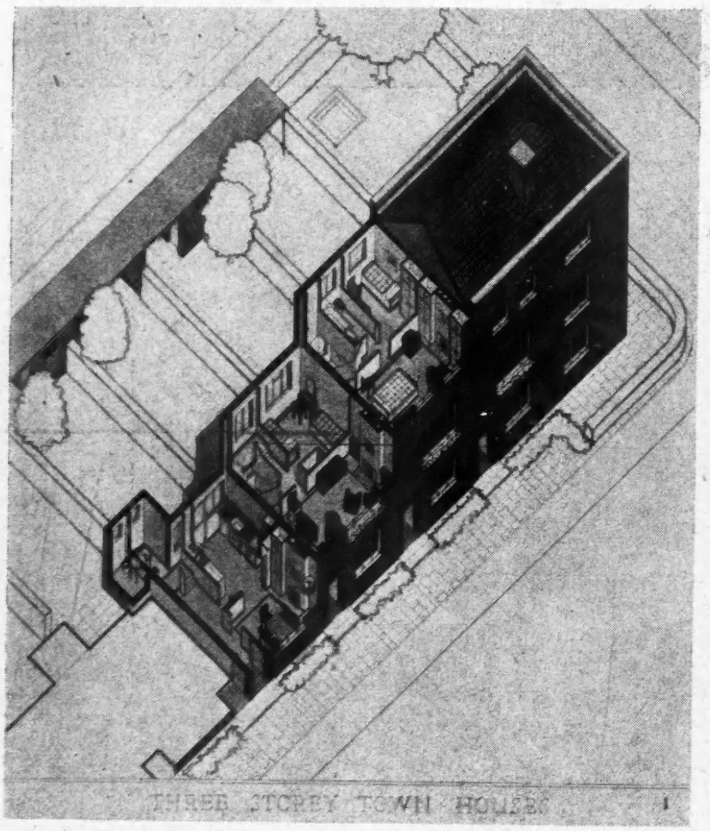
Discussion.

Proposing a vote of thanks to the President, MR. JAMES W. R. ADAMS said that with regard to the President's remarks on the importance of planners keeping their feet on the ground, he was prepared to support these views, provided he could interpret them in his own way and provided he was not regarded as sharing the views of the L.C.C. with regard to quasi-satellites.

Seconding, MR. G. L. PEPLER said the President's address illustrated the wisdom of the founders of the Institute in including lawyers in the professional team from whose respective arts and sciences the new profession of town planning was in the first instance to be evolved. The speaker recalled that on the occasion when Mr. Silkin addressed the Institute's summer school at Reading this year he (Mr. Pepler) indicated that the Institute was alive to its responsibilities, and promised that it would cordially respond to the Minister's suggestion that some of the points that he then made should be jointly discussed by the Ministry, the Institute, the Universities and the local authorities. The President now endorsed that response and had given a lead which would stimulate every member.

For more than 30 years the members of the Institute had been developing and expanding the art or science which they served and working towards the day when its expression would no longer be thwarted by the obstacle of compensation. They believed that, owing to Mr. Silkin's Act, that day had now dawned. All that they asked was that those in charge of the machine would give them the opportunity to prove their worth.

With regard to the reference by Mr. Adams to quasi-satellites, Mr. Pepler thought the trouble with the L.C.C. was that it did not like to have a green belt around its middle-age spread!



M.O.H. HOUSING EXHIBIT AT OLYMPIA. 3-storey Town Houses. (See page 616.)

LOOKING AROUND OLYMPIA

By OUR OWN REPRESENTATIVE

THOSE who doubted the wisdom of holding a Building Exhibition this year, in view of the uncertainties which beset the industry generally, need only to make a short visit to Olympia to have their doubts dispelled. There they will see and learn for themselves the wide interest the exhibition has aroused not only among the professional and industrial building fraternity in this country but also, and at present perhaps more important, among authorities and governments from overseas.

Within a few days of the exhibition opening it was apparent that attendance figures would be well above those of pre-war years and that everything pointed to the event being an unqualified success. Up to Tuesday night, the half-way stage, 53,533 persons had attended. Much of the credit for such a happy state of affairs must go to the organisers, whose tasks in recent months have been anything but easy.

The general theme of the exhibition is worthy of note. On the ground floor are shown all the things which a live and highly-skilled industry can manufacture and produce, while upstairs, in the gallery, the scene is set on more cultural and aesthetic lines, the displays giving a clear and informative indication of the application of the products exhibited below. This emphasis of the contribution that the building industry can make in the progress and re-development of the nation provides a degree of continuity in the exhibition which is frequently lacking in other similar enterprises.

The gallery exhibits are well worth a visit for an hour or two, for here are to be found some of the most interesting sections of the exhibition. Notable are the contributions made by overseas governments, in particular those of Belgium, Czechoslovakia, Holland and Poland. All was not plain sailing in arranging for these displays to take their places on their allotted stands. The Belgian exhibit, for instance, arrived at Dover in four huge packing cases, with an import licence marked "Nothing to Pay." This, it appears, was a somewhat difficult pill for the Customs and Excise authorities to swallow. Four large crates, it was felt, *might* have an odd corner filled with a bottle which *might* not be empty and, anyway, how much space would a couple of pairs of fully-fashioned nylons take up?

Delay while the crates were opened at Dover and re-fastened before being transported on to London would mean that the exhibit would not arrive in time for the opening at Olympia. Eventually it was arranged that a Customs man would accompany the crates and be present at Olympia when they were opened. Thus the exhibition was treated to an "opening ceremony" a few hours before the official one. But all fears (and hopes) were groundless, the crates contained only material for the exhibition. However, the Belgian display, which was specially prepared for the occasion by M. Axel Lemesre and M. Ray Rooryck, gives an admirable indication of the reconstruction work progressing in that country.

The model of the scheme for the Government headquarters in Prague also arrived with little time to spare. It is an excellent model, Mrs. Hugh Montgomery informs us, and she should know, for she spent a considerable time placing all the separate buildings in their correct places on the model, without any key or map to help; it was like playing with a gigantic jig-saw puzzle. Incidentally, it is to Mrs. Montgomery that much of the credit is due for enlisting the support and active participation in the Exhibition of foreign countries. In recent months she has personally visited the various embassies in London and obtained their support.

The joint exhibit of the Ministry of Works, the Ministry of Health and the Department of Scientific and Industrial Research is an absorbing display which bears the title "The Builder and the State." Particularly well done is the section showing the domestic fireplace through the ages; even the pictures on the walls throw an interesting sidelight on the ordinary man's change of taste in domestic art since the 1870's. It seemed a point for reflection that coal cost only 17s. a ton in 1875. Moreover, despite the great advances that have since been made, a somewhat ornate type of kitchen stove which was all the rage in that year is still in demand, as order-books show.

The space allotted to a contrast in back gardens—1910 compared with 1950—as visualised by Mrs. Darcy Braddell and Lawrence Wright, A.R.I.B.A., is well justified. The authors have avoided the mistake of overdoing the subject, with the result that the sympathy, and not the ridicule, of the viewer is immediately invoked. The ingenious device for keeping the coal to the back of the cupboard in the 1950 garden is worth noting, for it effectively helps the householder to fill the shovel with comparative ease. Poultry-keepers, too, cannot fail to admire the tidy appearance which rigid wire mesh can give to the run.

Mr. Edgar Pitt has assembled what time will prove to be a most valuable collection of drawings and sketches under the heading of "This was London." Several of the drawings are his own work, and they include some of the beautiful London buildings destroyed by bombing during the war. Mr. Pitt made and collected the drawings in anticipation of the destruction of the buildings they represent, and in some instances they constitute the only existing pictorial record.

Crafts Exhibits.

The exhibits of the L.C.C. and Middlesex C.C. Schools of Building include work of a standard fit to take its place in any exhibition of craftsmanship. The woodwork and metalwork are of a particularly high quality.

Looking down on the Exhibition from the gallery, the Grand Hall presents a bright and lively scene, and the constant buzz of voices floating up from the stands augurs well for business enterprises. The scene below can be viewed in comparative comfort, too, for the thoughtful organisers have provided a plentiful number of armchairs for weary viewers. There is so much that is new to see and examine at this first post-war Exhibition that a day is barely sufficient to cover the ground. It may have been for this reason that a visitor telephoned the Exhibition offices the day after the opening, and anxiously asked, "I say, what's the situation with regard to bath chairs at your Exhibition?"

One note of warning to intending visitors to Olympia. Messrs. English Clock Systems, Ltd., have on their stand an admirable clock, the decisive tones of which denote the passing hours with commendable punctuality, so that other exhibitors and visitors glance at their watches and set them right by it. Every so often, however, a visitor arrives at the English Clock Systems stand and expresses a desire for a demonstration of the clock's striking tones. The chaos this creates among hundreds of wrist and pocket watches is just nobody's business. Time flies at Olympia.

L.M.B.A. AREA CHAIRMEN. Seen above are the Area Chairmen of the London Master Builders' Association, photographed at the N.F.B.T.E.—L.M.B.A. Clubroom at the Building Exhibition. Left to right are :—*Back row :* Mr. G. S. Garner (Central No. 2 Area), Mr. O. G. Doxat-Pratt (Southern Area), Mr. A. G. Miles (N.E. Area), Mr. W. K. Laing (Northern Area), Mr. T. W. Pinion (S.E. Area), Mr. D. E. Woodbine Parish (Central Area No. 1), Mr. G. H. A. Hughes (Director, L.M.B.A.), Mr. E. W. Garrett (Immediate Past President). *Front row :* Mr. S. F. S. Hearder (Director, N.F.B.T.E.), Mr. E. A. Thorogood (S.W. Area), Mr. H. J. Falkus (Central Area No. 3), Mr. E. J. Smith (President, N.F.B.T.E.), Mr. P. Smallwood (President, L.M.B.A.), Mr. J. S. Rayner (Central Area No .4), Mr. R. E. Stenning (Secretary, L.M.B.A.), and Sgt.-Maj. R. L. Maton (L.M.B.A.).

WHAT'S NEW AT THE BUILDING EXHIBITION

By OUR SPECIAL REPRESENTATIVE

THOUGH nine years have passed since the last Building Exhibition, and during that time a world war has intervened, bringing with it new methods of construction as well as of destruction, we must not expect to find closely-kept secrets revealed at Olympia. There is nothing akin to the shrouded new model at the Motor Show. It must not be forgotten that during the intervening years the technical Press has not been silent, but has kept the industry informed of new developments. Nevertheless, the Exhibition provides the opportunity of seeing in the flesh, so to speak, a great range of appliances and materials which perhaps have been known only by illustration and description. It is true that there are many familiar and well-tried things that remain as they were, having presumably achieved perfection, or as near it as is possible. But there are many new things, and improved versions of old things. Not everything is there, even though the Exhibition fills the whole of the Grand Hall, the annexe and the National Hall. Several outstanding things are not there, but the Exhibition brings together a very goodly collection: it is indeed a remarkable display when you consider the present shortages and difficulties of production, difficulties even in finding enough material to make the stands of an exhibition.

On entering from Addison-road my eye was arrested again by the magnificent sweep of the Grand Hall roof, rising to 100 ft. above floor level and spanning 170 ft.: a brilliant engineers' job of iron and glass that has withstood 60 years of weather, wind and bomb blast.

Mechanised Building

A preliminary survey of the stands leaves one with the impression that there is a good deal to study in exhibits related to the mechanisation of building work. War-time achievements have indicated the possibilities of development with bull-dozers and kindred appliances for the clearance and levelling of sites, and the increased efficiency to be attained with improved types of excavators, mobile cranes and other hoisting appliances.

The latest models of the Muir-hill dumpers (E. Boydell and Co., stand No. 253, Row N) include the handy 10B, which has been designed for use on soft ground and rough work on site, and is suitable also for road use. It has a struck-level capacity of 2½ cub. yds., and the improved form of the body reduces the adhesion of sticky materials to the sides. The driver faces forward, so that he has always a clear view of what is ahead, and he can turn his seat to operate behind the body, thus enabling him to place the machine exactly where needed when tipping the load. The dumper is driven by a four-cylinder petrol engine, and has double reduction transmission.

Cranes and other lifting appliances are playing an increasingly important part in the mechanisation of building, and there are several new models to be seen at Olympia. Some others, however, are missing, notably the "Wild" and "TeanTee" builders' elevators.

Two light-weight portable cranes particularly suited to building work are the new type "G" and type "AM," shown by R. H. Neal and Co. (stand No. 294, Row R). These are small petrol cranes of 15 cwt. and 8 cwt. capacity, respectively. They are the outcome of strenuous war-time experience, and they incorporate, in a modified form, all the features of the larger Neal cranes. The main difference is that they are not self-propelling. They can, however, be easily towed from place to place or put on an average lorry. The standard jib is a 15-ft. channel one, but extension masts can be used, enabling various kinds of lifting jobs to be done, with lifts up to 35 ft. and reaches out to 19 ft.

Three of the Jones family of cranes, the "Super 15," "Super 22" and "Super 40," are shown by George Cohen, Sons and Co. (stand No. 55, Row C). These are all mobile cranes, mounted on a chassis with rubber tyres. The latest is the "Super 15." It is an extremely handy little crane, powered by a 6-h.p. petrol engine, air-cooled (which avoids risk of damage by frost). It travels under its own power, and steers where wanted, carrying full load (15 cwt.). Hoisting and slewing are power-driven, with variable speed control. It has a 16-ft. channel jib, but can be supplied with extension masts to give lifts up to 20 ft. and 35 ft. above ground.

Allied to cranes for the mechanical handling of material are hoists of various kinds. The fixed tower hoist has long been in use, but improved versions of it have been introduced in recent years. Two or three examples are included in the Exhibition.

The Parker "Hoistex" equipment (Frederick Parker, Ltd., stand No. 270, Row P), with petrol or Diesel engine, or electric motor drive, provides for medium or express speeds, with single or double barrow platforms. It can be operated by remote pull-rope control, and safety devices have been incorporated to prevent the platform overrunning the top, and to arrest it in the event of the wire rope breaking.

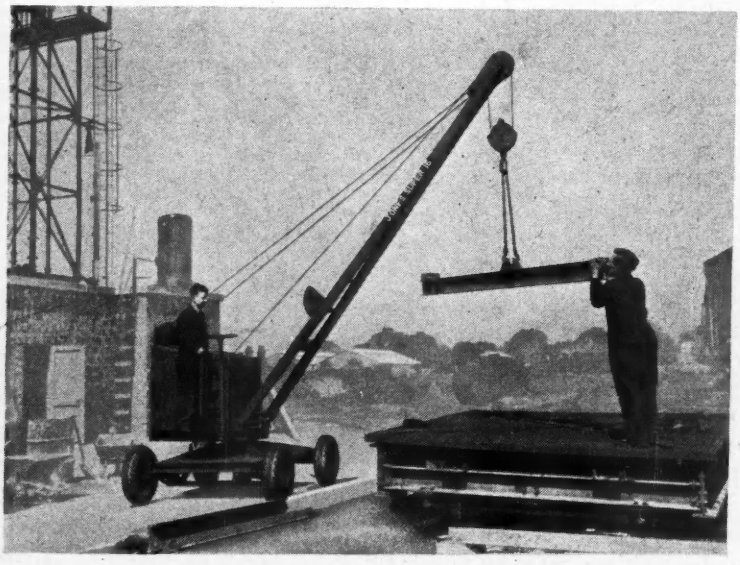
Another tower hoist is the "Planet." This can be seen working at the stand of E. P. Allam and Co. (No. 281, Row Q), with a ¼-yd. tipping skip on the platform. In place of the skip, the platform can be fitted with a wood decking to take one or two barrows.

The "Wickham" (Wickham Engineering Co., stand No. 142, Row G) is another up-to-date tower hoist. It has a steel angle mast built up in standardised sections of 9 ft. and 18 ft. The sections butt on to each other, and are so rebated as to be self-aligning. They are bolted together without fish-plates.

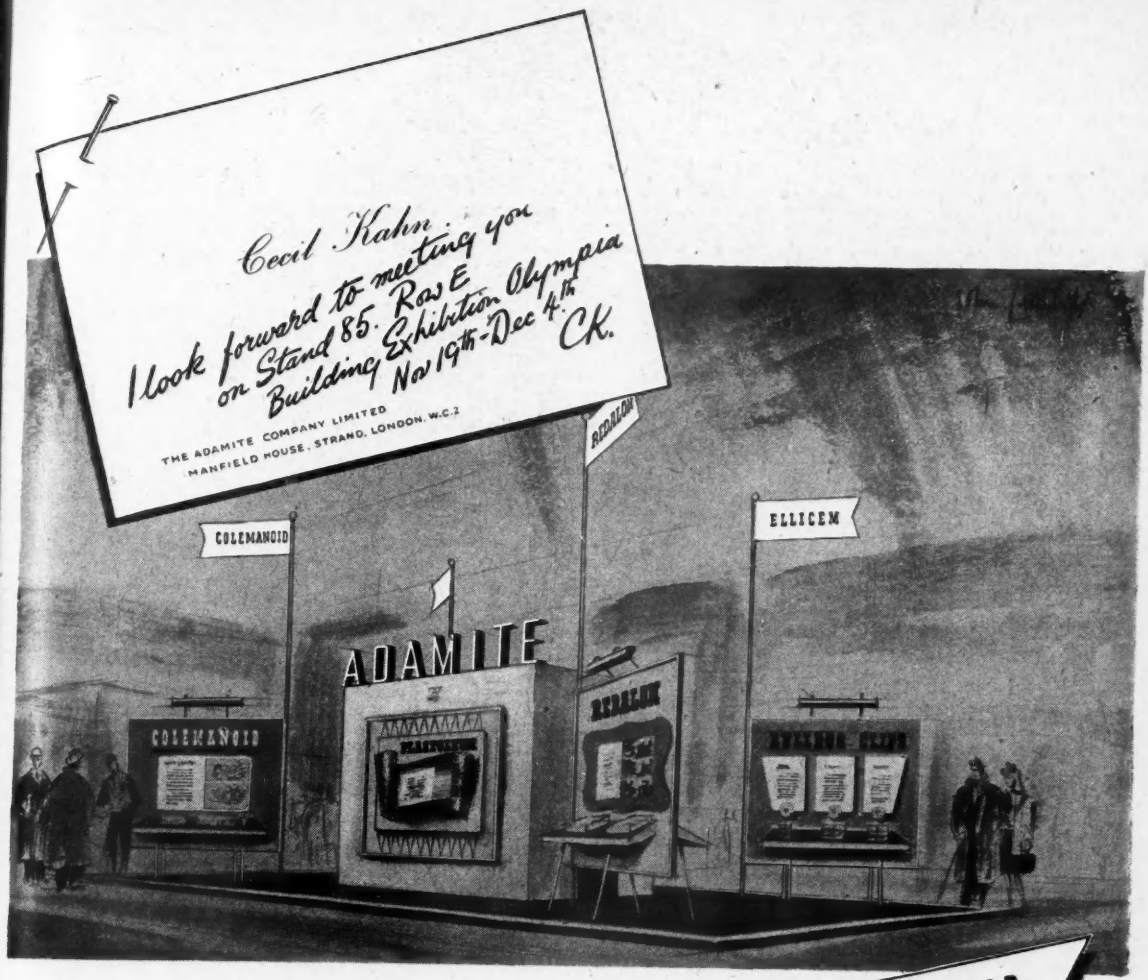
The fixed tower hoist has its particular use in the erection of large buildings. To meet the need for smaller buildings, and especially for housing work, mobile hoists and conveyors have come largely into use. And here the fact may be noted that initial and working costs largely determine the economics of mechanical aids to building. A particular appliance may deal with materials in a tenth of the time taken by hand labour, but, to make it an economical proposition, the contract must be planned and organised so that the machine is not standing idle, eating its head off. It is for this reason that we have seen many appliances introduced that do not involve a high initial cost and can be operated at small expense.

Five or six mobile hoists are exhibited. The "See-Saw" (A.C.E. Machinery, Ltd., stand No. 259, Row O) is a self-contained unit built on a 10-ft. channel-steel chassis with a power-driven winch at one end and an angle framework at the other, with tower and platform pivoted on it. Folded down, the total height is about 10 ft. With the tower raised, the platform can reach a delivery height of 17 ft. One man can raise or lower it, and two men can push it along. There are two models, for hoisting 5-10 cwt. and 10-15 cwt.

The "Ant" (British Hoist and Crane Co., stand No. 60, Row D) is another mobile hoist that has been designed expressly to meet the needs of the house-building contractor.



The Jones "Super 15" Mobile Crane (George Cohen, Sons and Co., Ltd.).



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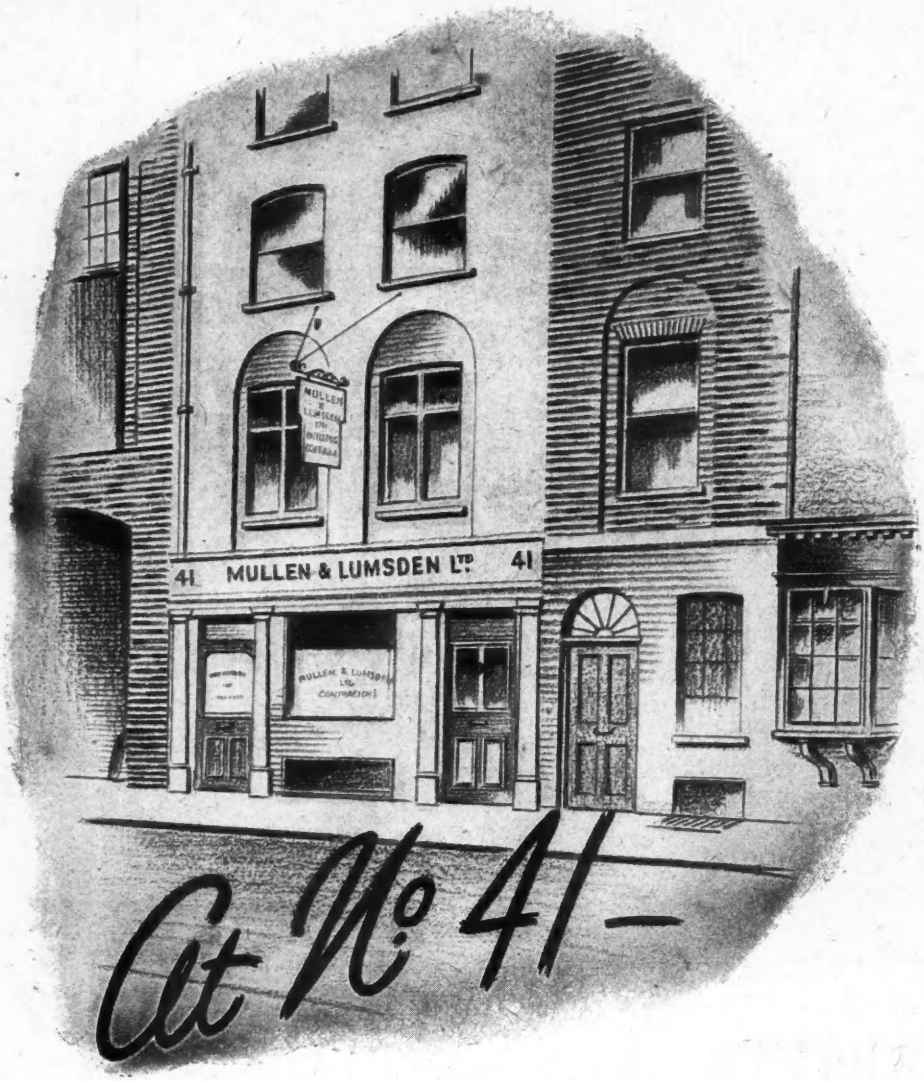

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Among other innovations to be noted are the "Hodhoist," the "Thwaites" hoist and the "Rota-Hoist."

The "Hodhoist" (to be seen on the stand of the Northern Steel Scaffolding and Engineering Co., No. 56, Row C) replaces the man carrying hods up a ladder. It consists of a lattice tower with an air-cooled engine at the bottom and wheels at the top. It carries loaded hods to any desired level. The hods are put on to a conveyor, which stops automatically when they are taken off. The lattice tower is made in sections to suit a range of heights.

The "Thwaites" hoist (Mechanical Equipment, Ltd., stand No. 4, Row A) is a light, portable appliance designed to be

The "Thwaites" Builders' Hoist (Mechanical Equipment, Ltd.).

operated by two men, and having a delivery height of 18 ft. It consists of a tubular frame with a small motor-driven windlass at the bottom, a pulley block at the top, and a cage to hold 24 bricks. A pull on a rope at the bottom engages the clutch, and the cage is drawn up by a steel rope. When it reaches the top it swings round automatically into position for unloading, and is lowered on to the scaffold by a pull on the brake release rope. The hoist weighs 4 cwt., and is mounted on a pair of pneumatic wheels.

The "Rota-Hoist" (Metal Agencies Co., stand No. 140, Row G) is a one-man appliance designed to replace the hod or gin-wheel as a means of raising bricks from ground level to any part of a scaffolding. It consists of a beam which fits centrally on top of a steel scaffold tube, so that it can turn in any direction. At each end of the beam is a pulley (2 to 1 ratio, thus reducing the weight of the load by 50 per cent.). A rope is passed through these pulleys, and one end is attached to a detachable clamp which will hold up to 10 bricks. These are gripped by the clamp when the rope is pulled, and are held tight while being raised. When the load is lowered on to the platform the clamp automatically releases itself. It is claimed that 500 bricks per hour can be raised in this way by one man.

Another simple accessory for saving time and labour in building is the "Antelope" Speed Barrow (British Hoist and Crane Co., stand No. 60, Row D). This has a forked front to carry pallets in which bricks, tiles, etc., are stacked, ready to be lifted off in bulk, without duplicate handling.

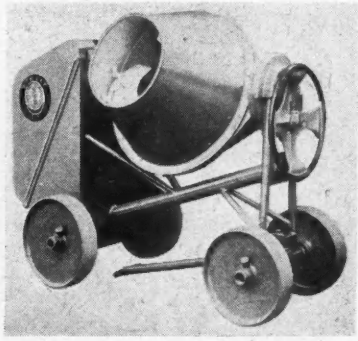
Another accessory, evolved by the Field Test Unit of the Ministry of Works, can be seen on the D.S.I.R. stand in the gallery. It is a brick-carrying truck which clamps the bottom row of a stack of 40 bricks and enables them to be carried without a stillage and put down where wanted ready for use. On this stand also can be seen a three-wheel barrow carrying 6 cwt. of material. It has a little petrol engine mounted with the drawbar over the front wheel. It is a prototype model.

For taking the brute labour out of earth consolidating there is the "Pegson" Power Rammer (Pegson, Ltd., stand No. 25, Row B). It is a self-contained appliance with a rammer driven by a petrol motor. It is held by two handles, and jumps up 2 ft. and more after each stroke.

Concrete and Steel Construction

Since timber is in such short supply, various expedients have been adopted to meet the deficiency. For housing, there are the new lattice beams. Two of these are shown at the Exhibition—the "Sommerfeld" joist and the "Davis" beam. The "Sommerfeld" joist (K. J. and A. Sommerfeld, stand No. 235, Row L) is an adaptation of material—steel rounds, flats and angles—which was produced during the war for portable road surfaces for the Forces. It consists of top and bottom members connected by V-shaped lengths of steel rod, with a timber fillet top and bottom. Standard sections 7 in. by 1½ in. and 8 in. by 1½ in. are made in lengths up to 25 ft., and are stronger than timber of similar section. The "Davis" beam (H. and C. Davis and Co., stand No. 298, Row S) is formed of top and bottom members of mild steel angle connected by straps arc-welded in the form of a lattice. Wood fillets are attached to the top and bottom of the beam, which is made in nine lengths, from 3 ft. to 12 ft. 6 in.

The shortage of timber has brought concrete into use more extensively than ever before, with more efficient machines for its application. One might have thought that, by now, concrete mixers had pretty well rung all possible changes in design. But improved models still make their appearance. A dozen or more of them can be seen at Olympia.



The "Streamlined" 3½-T Mixer (Winget, Ltd.).

Three new "Winget" mixers are shown by Winget, Ltd. (stand No. 251, Row N). One of them is the streamlined 3½ T (5/3½ cub. ft.), of welded steel tube and plate construction combining strength with lightness. It has several new features. The drum is of large diameter with a wide-sweeping semi-helix blending with a broad central cone and specially-shaped mixing blades. The engine is completely enclosed by a housing which lifts up like a modern motor-car bonnet, and the pivoted draw-bar can be tucked completely under the frame out of the way when the mixer is working. Another interesting feature is the tool container, which is fitted into the main tubular frame and secured by a lock.

"Rex" mixers are shown by Blaw-Knox, Ltd., on stand No. 288, Row R, the smallest in this range being the 3½ T.

Among "Liner" mixers (Liner Concrete Machinery Co., stand No. 240, Row M) the "Cumflow" merits particular attention. It has an open pan with mixing stars and blades and a hinged roller which rides on top of the material, producing a kneading effect, the mix being thoroughly blended and discharged through a door in the centre of the pan.

Among other concrete mixers which should be studied are the Winget/Neal 10/7 "Rapid" (rotary closed-drum mixer) and two Parker mixers—the "Speedia" and the "Little Giant" (stand No. 270, Row P).

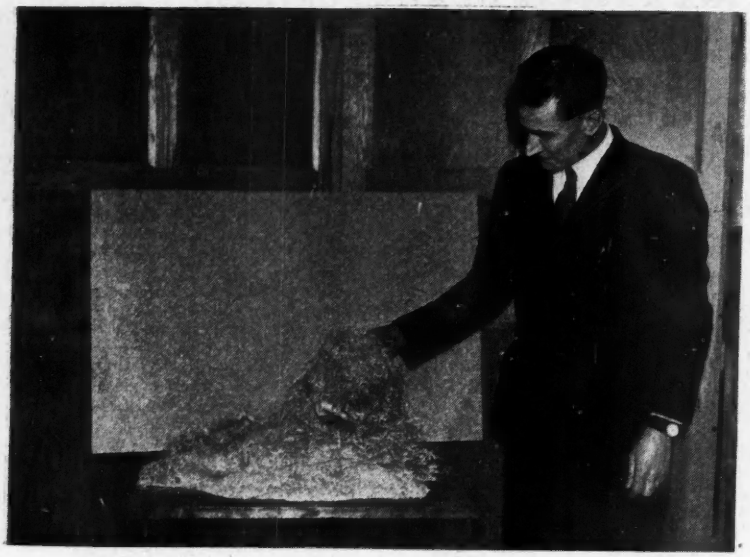
Weigh batching plant for use with mixers is one of the newer developments for concrete production. Two examples can be seen at the Exhibition.

Millars' mobile plant (Millars' Machinery Co., stand No. 239, Row M) is designed to meet the needs of the average site contract where concrete of consistent quality is required. It will feed two 14/10 mixers. Mounted on a wheeled chassis, it is ready for use without erection, and it gives accurate proportioning with far less labour than shovel-feeding. Its storage capacity is 5 cub. yds. of coarse aggregate in one or two grades, fine aggregate 2½ cub. yds., cement 1¼ tons.

The Blaw-Knox Junior Weighbatcher consists of a two-compartment hopper for coarse aggregates and sand, and a batch weighing hopper with an 18-in. weighing dial. Each compartment has a vertical cut-off door working on roller slides on the guillotine principle, which ensures precise control of the outlet feed. The whole unit is mounted on a light structural frame which can be easily moved from place to place. It will feed any size or type of concrete mixer, and only one man is needed to control it.

Among applications of concrete to building, the "Cheecol" process (Cheecol Processes, Ltd., stand No. 97, Row E) should be noted. By this process, instead of the dry materials being mixed first and the water then added, the aggregate is placed in position between forms, and a grout made of cement, sand and the prepared gauging water (with "Cheecol" liquid added) is poured in, filling all interstices.

Two or three concrete-block making machines should be examined—the "Trianco" (Trianco, Ltd.) on stand No. 269, Row P, and the "Macoblok" (Metal Agencies Co.) on stand No. 140, Row G. The "Ranalah" steel moulds (Ranalah Sales Corporation, stand No. 110, Row F) should also receive attention.



"Weyroc" Panelling made from wood waste and plastic (Jicwood, Ltd.).

New Materials and Methods of Construction

Post-war years have brought into use a number of new materials and methods of construction. Some of the materials are for the structural fabric of buildings, others for interior finish and equipment. As represented at the Exhibition, they include "Stramit," "Weyroc," "Fibreglass," "Warerite," "Holoplast," "Flexoply," "Perspex," "Formica," "Semtex Fleximer," "Plastoleum" and "Accotile." A brief note about each of these is given here.

"Stramit" (Lloyd Boards, Ltd., stand No. 133, Row G) is an English-made board composed of straw compressed under heat and enclosed with liner board. It is 2 in. thick. 4 ft. wide and obtainable in 8, 9 and 10 ft. lengths. Its "U" value is 0.60.

"Weyroc" (Jicwood, Ltd., stand No. 330, Gallery) is a new type of board which can be used (licence-free) as an alternative to timber, plywood, etc. It is composed of wood fibre and plastic, compressed at high temperature, and surfaced with specially prepared paper or veneer.

"Fibreglass" (Fibreglass, Ltd., stand No. 229, Row L) is not a fibre made out of glass, but glass in fibre form. It can be used in several different forms. For insulation purposes in building, it can be used as a loose packing between joists; as batts; in the form of bitumen-bonded rolls, or quilts encased in "Ibeco" (Kraft) paper, for lining walls, ceilings and floors; as rigid sections for insulating pipes, boilers, etc.; and as resin-bonded slabs for refrigerators and domestic cookers.

"Warerite" (Warerite, Ltd., stand No. 71, Row D) is a laminated plastic material in sheet form which can be applied to a core to form panels for partitioning or as wall surfacing. It can also be used as veneered plywood.

"Holoplast" (Williams and Williams, stand No. 72, Row D) is a structural plastic board 1 in. thick manufactured from Kraft paper impregnated with synthetic resin. Boards are built up with a series of double-T sections comprising surface sheets and spacing members (webs) at 2-in. centres. The flange and web thicknesses of the material are ½ in. Wood edges are incorporated in process of manufacture and are homogeneously bound to the material.

"Flexoply" (Flexo Plywood Industries, Ltd., stand No. 245, Row N) is a waterproof plywood made up of three or more layers of veneer, resin-bonded under hydraulic pressure. It is used for wall panelling, flush doors, etc., and as insulating panels with a core of cork, "Onazote" or "Dufaylite."

"Perspex" (Imperial Chemical Industries, stand No. 76, Row D) is an acrylic resin made up into sheets, blocks, and other forms. There are two varieties of sheets—clear and opal. Corrugated clear sheets are made for use as roof lighting, to fit in with corrugated iron or corrugated asbestos-cement sheets.

"Formica" (De La Rue Insulation, Ltd., stand No. 162, Row H) is a decorative laminated plastic material for use on walls, doors, table tops, etc. One grade of it is proof against burns by cigarettes. Akin to "Formica" is "Traffolyte," a laminated plastic sheet with a coloured or wood-grain finish.

"Semtex Fleximer" (Semtex, Ltd., stand No. 43, Row C) is a flooring material composed of rubbers or resins combined with hydraulic cements stabilised by curing ingredients. It is laid cold *in situ* ¼ in. thick on a smooth concrete screed. It is generally float-finished, but can be surface-sanded for more decorative effects. "Semastic" floor tiles, by the same makers, are composed of fibrous material bound with synthetic resin and non-fading pigments.

"Plastoleum" (The Adamite Co., stand No. 85, Row E) is another plastic floor covering.

"Accotile" (Armstrong Cork Co., stand No. 173, Row J) is a flooring material made of asbestos fibre, mineral pigments and asphaltic or resinous binders. It is being produced in this country as the equivalent of Armstrong's asphalt tile in America. It makes a very pleasant floor, is hard-wearing, and, as regards cost, compares favourably with good-quality lino. It can be laid on a concrete screed without need of a dampcourse, and also on wood floors. There are four standard sizes, 6 in. x 6 in., 9 in. x 9 in., 12 in. x 12 in., and 18 in. x 24 in., in two thicknesses—⅛ in. for houses, offices, etc., and $\frac{3}{16}$ in. for entrance halls and public spaces where traffic is heavy.

Passing from new materials to methods of construction, I noted especially the "Thermagard" system, "Alcrete" construction, and three new roofing systems—"Thermosteel" insulated decking, "Bitumetal" roof construction, and the "Broderick" insulated copper roof.

The "Thermagard" system of construction (designed by Gardiner Sons and Co., in conjunction with The Cementation Co., stand No. 78, Row D) is a standardised system for school buildings. It employs a steel framework designed in conformity with B.S.S. 499 and based on a modulus of 8 ft. 3 in. All members are built up and drilled to jigs, thus ensuring accuracy and interchangeability. Stanchions are drilled to suit various heights of windows, which are of the standard school type and unit sizes, constructed of extruded aluminium alloy sections. Cills and soffits are of pressed aluminium alloy, and gutters are of pressed steel, galvanised. "Thermacoust" wood-wool slabs are used to form the roofs, partitions, suspended ceilings and the inner leaf of the exterior cavity walls, with 4½ in. brickwork outside.

"Fibreglass" Insulating Quilt being laid (Fibreglass, Ltd.).

"Alcrete" construction (Structural and Mechanical Development Engineers, Ltd., stand No. 96, Row E) is a combination of aluminium alloy for roof trusses and foamed concrete for walling. Standard roof trusses are made for spans from 15 ft. to 50 ft. They are very light and do not require painting. Larger spans can be achieved.

"Thermosteel" Insulated Decking (D. Anderson and Son, stand No. 113, Row F) is a system built up of steel deck, insulation and waterproofing. The units are fabricated from steel sheet in channel sections 10½ in. wide, 2 in. deep with base flanges, in multiples of even feet for supporting steelwork up to 10 ft. centres. They are stiffened by transverse flutings at regular spacings, and the flanges have side corrugations which interlock and are bolted to the adjacent units, thus forming a supporting rib of the decking, this rib being reinforced by fitting an inverted channel filler section. The decking is insulated on top with cork, fibreboard or wood-wool slabs bonded in bitumen compound, and is waterproofed by two layers of "Rok" roofing similarly bonded. To reduce the effects of solar radiation, it can be surfaced with white spar bedded in the bitumen compound, or "Rokolor" bituminous aluminium roof dressing can be applied.

"Bitumetal" Roof Construction (William Briggs and Sons, stand No. 32, Row B) is particularly suitable for large buildings—schools, factories, etc.—where the weight to be carried is important. It consists of a decking of interlocking corrugated units of aluminium alloy sheet 10 ft. by 2 ft. spanning from purlin to purlin; a layer of ½-in. insulation board bonded with hot bitumen on top of the decking; and a waterproof covering of multi-layer flexible roofing bonded with hot bitumen to the insulation board. The weight of the complete roof varies from 4 to 8 lb. per sq. ft. according to the specification of multi-layer flexible roofing employed. The "U" value is 0.33. It is adaptable to flat or pitched roofs.

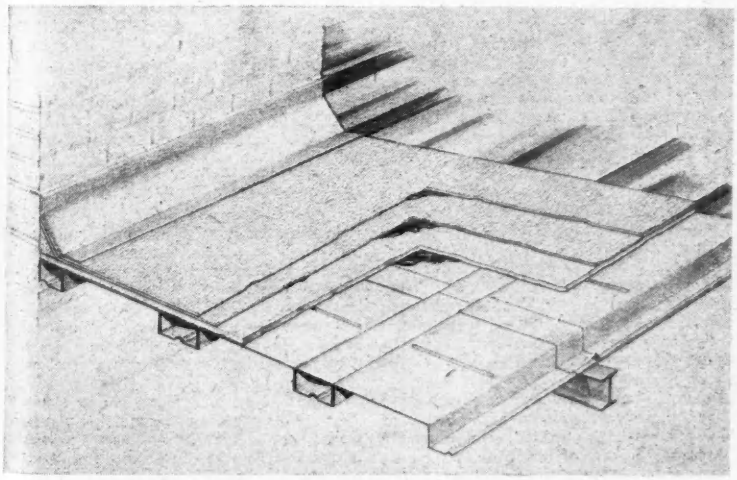
"Broderick" Insulated Copper Roof (Tentest Fibre Board Co., stand No. 116, Row F) is a light-weight roof of low pitch which saves approximately 50 per cent. of timber compared with a normal tiled roof. It is formed with prefabricated trussed rafters at 2 ft. centres covered with factory-made slabs of insulating board covered with light-gauge copper. The slabs are 1 in. thick, 2 ft. wide, and in lengths up to 12 ft. They have projecting flanges at sides and ends, upstanding joints 1 in. high being formed from ridge to eaves, and the ridge covered with a heavier-gauge copper capping. The roof is claimed to have long life with low initial cost and low maintenance.

S.M.D. Aluminium Roof Trusses, 60 ft. span, now being erected at Rye, Sussex (Structural and Mechanical Development Engineers, Ltd.)

Another interesting design is the "T.D.A. Roof," a scale model of which is shown on stand No. 261, Row O, with drawings and photographs to demonstrate its advantages for local authority housing schemes. It has been evolved by the Constructional Research Directorate of the Timber Development Association. It is more rigid than a roof of traditional construction. It is also cheaper, for, though it involves more labour cost, it uses less timber. And not the least of its features is that it allows complete freedom in planning, as it does not need any support by internal partitions.

"Aluminex" roof glazing is displayed full scale in the stand of Williams and Williams (No. 72, Row D). This employs a glazing bar and cover strip of magnesium silicon aluminium alloy, possessing maximum strength and a high resistance to corrosion. The system is applicable to vertical as well as roof glazing, and a great feature of it is that it can be extended in both directions indefinitely.

Tubular construction is represented at the Exhibition by half a dozen well-known firms. It has now become the standardised method, in place of timber scaffolding, but is so familiar that passing reference is sufficient here, except to note the new aluminium alloy fittings, "Norstel" (Northern Steel Scaffolding and Engineering Co., stand No. 56, Row C) and "Acrominium" (Acrow Engineers, Ltd., stand No. 95, Row E). These fittings are corrosion-resisting and are claimed to combine the properties of aluminium with the strength of steel, at one-third the weight and with no loss of strength.



Anderson's "Thermosteel" Insulated Decking (D. Anderson and Son, Ltd.).

Windows and Doors

Having dealt, in the foregoing, with exhibits related more particularly to the fabric of buildings, I pass on to consider finish and equipment. The demarcation line cannot, however, be drawn too firmly. There are, for instance, windows and doors. Several exhibits of these attracted my attention.

On the stand of the English Joinery Manufacturers' Association (No. 299, Row S) there is a fine display of "EJMA" standardised casements, now made by a very large number of joinery firms throughout the kingdom. They are so well known and established in favour that passing mention only will suffice for them here. A fresh development is a design for "EJMA" double-glazed casement windows (shown by a prototype model). Double windows are common in such countries as Sweden and Canada, but are rarely seen in this country. It is likely, however, that they will come into much more general use here, not only to counteract heat losses but also as insulation against noise.

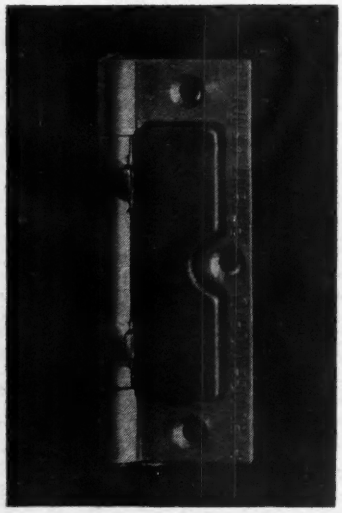
Another interesting exhibit on the same stand is a spring balance for sash windows, in place of cords and weights. Spring balances are quite common in America, and at least one—a pullman balance—was marketed in this country many years ago:

but, in general, we have stuck to the old way with all its deficiencies (just as we persist in the stock design of a double-hung sash window with exasperating pocket-pieces and ungetatable weights). Bearing this in mind, I welcome the introduction of the "Alwintite" double-hung aluminium window with sash balances (British Pressed Panels, Ltd., stand No. 145, Row G), which is shortly to be made in this country by arrangement with the Aluminium Window Corporation of New York. It is claimed to have all the advantages and none of the disadvantages of the wooden window. It does not swell or rot, and does not require painting.

Even before the timber shortage, metal was being extensively adopted for door frames and doors. Present conditions give occasion for still greater use. So it is timely to find several examples at Olympia. Pressed steel door frames for building-in are shown by Henry Hope and Sons (stand No. 79, Row D), Joseph Sankey and Sons (stand No. 51, Row C) and John Thompson Beacon Windows, Ltd. (stand No. 171, Row 6). These make a very sound job.

Three or four new designs for door furniture merit attention. Nettlefold and Sons (stand No. 77, Row D) have redesigned their "Bescot" door closer. It is in a neat horizontal casing incorporating double compression springs which act like the recuperator of a gun. There are four different sizes, for inside and outside doors. The "Bescot" mortice locking latch is also shown. This is suited especially to bedroom, bathroom and similar doors. No keys are needed. The bolt is locked simply by turning up the handle on the locking side, and it cannot be unlocked by the outer handle until the locking handle is turned down.

Two new designs of cylinder locks should be examined. One is the "Code Lock" (Code Lock, Ltd., stand No. 33, Row B), which is operated by an adjustable key that can be altered to an infinite number of settings. The other is the "Clip Lock" (Whitcliff Corporation, stand No. 314, Row T). This consists of a slotted bolt which fits into a small circular case, and a spindle with two handles. It is fitted by boring two holes in the door, one in the thickness, the other on the face. A flat key fits inconspicuously under the handle, and the mechanism is locked by simply withdrawing the key. The handles are thereby disconnected from the bolt.



The "Hurlinge" Patent Hinge
Hurcal Engineering Co., Ltd.).

Those who are anxious about making their homes as secure as possible against burglars should see the locks and bolts for doors and windows on stand No. 236B, Row L (Banham's); and those who want to keep out draughts from windows and doors should see the metal strip (phosphor-bronze alloy) equipment of British Hermé seal, Ltd. (stand No. 41, Row C).

A new hinge, the "Hurlinge," is shown by the Hurcal Engineering Co. (stand No. 393, Gallery). It is formed out of one piece, saving 40 per cent. of metal without loss of strength. The off-set pin and projecting lugs automatically "position" it on door and jamb, and there is no necessity to form rebates.

House Warmth and Hot Water

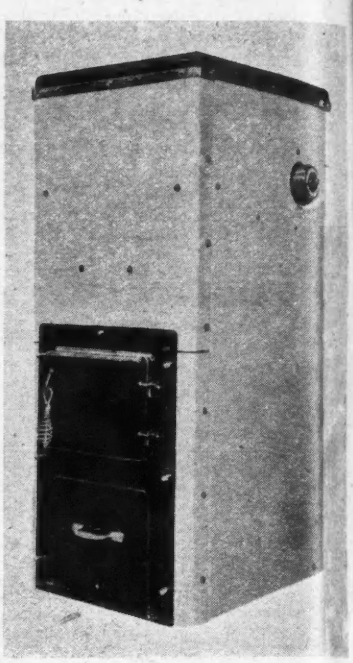
This is the time of year when we become conscious—sometimes most uncomfortably conscious—of the deficiencies in the warmth of our houses and in the supply of hot water for baths. There are, of course, various means for getting complete satisfaction in both of these matters, and they have been fully represented in the Press and at exhibitions. At the Building Exhibition they do not figure largely, but make a fair show.

Recent research and experiment have resulted in considerably improved heating efficiency of the open fire, though there is a tendency towards getting more out of it than is possible. The aim now is to so contrive it that the fire not only gives increased warmth in the room in which it is set, but also adds warmth to other rooms. This is achieved by constructing warm-air ducts with outlets to bedrooms upstairs. An example is shown by the Solid Smokeless Fuels Federation, on stand No. 231, Row L. Here can be seen an installation adopted by the London County Council, with a convector open fire connected to a "True Flue" chimney formed with precast concrete blocks and a circular fireclay flue.

The latest open fires are brought together in an admirable setting on the stands of the Coal Utilisation Joint Council (Nos. 99-100, Row E). Among them is the "Hales" type ("Camelon" fire) which gives warmth by radiation and convection. The fire burns on a bottom grid, and fresh air is supplied through a duct under the floor. The air passes to the front of the fire through louvres fixed in the hearth, the opening and closing of these louvres being controlled by a knob. Another model of the fire is arranged for air supply above the hearth. A closure lid fits into a recess at the back of the grate and can be pulled down over the fire overnight or when the room is left unoccupied for any considerable time. Several types of stoves, as well as one of the new insulated free-standing cookers, and combination grates, can also be seen on these stands.

The "Neofire" should especially be noted on the stand of Ideal Boilers and Radiators, Ltd. (No. 280, Row Q). It burns coke, anthracite or coal, warms the room with a cheery open fire, and heats three radiators, in addition to supplying domestic hot water on the indirect system. It fits into any fire surround with the normal 16-in. opening, and has a gas burner for easy lighting.

Domestic boilers are legion. Years have proved their worth, and a high degree of efficiency has been attained. But there are always possibilities of improvement. Hence new models. Among those at the Exhibition are the "Watts," shown by J. Brockhouse and Co., on stand No. 12, Row A,



The Watts Automatic Boiler
(J. Brockhouse and Co., Ltd.).

and the "Trianco" shown by Trianco, Ltd., on stand No. 269, Row P. Both are small boilers with a storage hopper and gravity feed, burning anthracite grains. The "Watts" provides for central heating (four or five radiators) and hot-water supply in a four- or five-bedroom house, and incorporates a small electric fan for forced draught, thermostatically controlled.

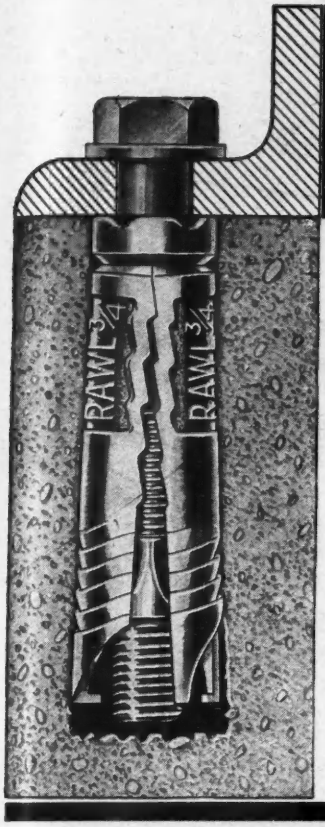
Gas fires, cookers and water heaters are fully represented by the exhibit of the British Gas Council (stand No. 273, Row P), and electric appliances by the exhibit of the British Electrical Development Association (stand No. 111, Row F).

An electrical innovation is the "Sadia" C.E.L. water-heater (Aidas Electric, Ltd., stand No. 143, Row G). This is designed to provide a constant supply of hot water throughout the year, from a 30-gallon cylinder heated from the fire in winter and by immersion elements in summer.

Another new electric water-heater is the Charlton "Twin" (British National Electrics, Ltd., stand No. 135, Row G). This is an enamelled insulated cylinder which can stand under a draining board. It has two heating elements—a 500-watt element near the top and a 2,500-watt element near the bottom, the former providing six gallons of very hot water for washing up and other domestic needs, the latter being brought into circuit by a foot switch and providing hot water for baths. There are two models, 15-gallon and 20-gallon.

Another addition to electrical equipment for the home is the "Hurseal" radiator (Hurseal, Ltd., stand No. 254, Row N). This is a pressed-steel radiator filled with low-expansion oil, hermetically sealed.

"Ascot" instantaneous gas water heaters, including Type RS 51/1, which gives warm, hot, or boiling water at will, are shown by Ascot Water Heaters, Ltd., on stand No. 252, Row N; the latest "Ewart" geysers—the multipoint, bath geyser and sink geyser—are shown by Ewart and Son on stand No. 276, Row Q; and the De la Rue multipoint gas water heater is shown by De la Rue Gas Development, Ltd., on stand No. 277, Row Q.



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Rawlbolts are made in all sizes from ¼" to 1" bolt diameter, Whitworth thread. There are two types, Bolt-projecting and Loose-bolt, as illustrated, which is specially useful for heavy equipment because bolts can be inserted after the fixture has been placed in position.

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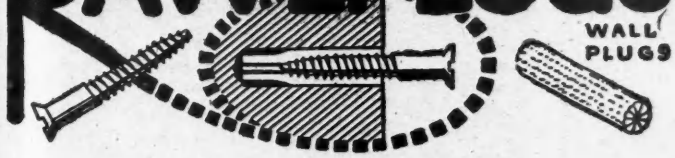

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Bathroom and Kitchen Equipment

Though distinct in their individual uses, bathroom and kitchen may be taken together, inasmuch as developments in equipment for both have followed on similar lines. This has reference especially to pressed metal units. Much has been done in this way in America, and, with larger presses becoming available, English manufacturers are now producing steel baths and basins finished in vitreous enamel. A number of examples can be seen at the Exhibition. The "Lilax" bath is shown by Coa Products (Cunliffe-Owen Aircraft, Ltd.) on stand No. 149, Row H. This is light in weight yet guaranteed against buckling and distortion. It is fitted with adjustable feet and is enclosed by patented curved panels which give knee and toe space—an important point, especially when a woman is bathing a child—and these panels can be fixed without requiring a wooden framework. Further examples of modern pressings are shown by Fisher and Ludlow, on whose stand (No. 148, Row H) can be seen a series of washbasins in five colours, formed of vitreous-enamelled 16-gauge sheet iron in conformity with B.S.S. 1329. Other examples are shown by Andrews Bros. (Bristol), Ltd., on stand No. 284, Row Q, and Easiclene Porcelain Enamel (1938), Ltd., on stand No. 230.

For kitchen equipment there is now an ample choice among pressed metal cabinets and units, and standardised wood fitments of modern design. Numerous examples are exhibited. Among the metal cabinets the units shown by Wallis and Co. (Long Eaton), Ltd. (stand No. 204, Row K), struck me as particularly satisfying, both in form and practical details. I think, however, that the vogue for immaculate white surfaces might be varied to advantage in favour of surface treatments akin to combing on paintwork. On cabinets as on floors, marks show far less when the surface in broken up than when it is in a large plain expanse. Trim and slick as the steel kitchen units are, their modern counterparts in wood are no less effective, as witness the series developed by the English Joinery Manufacturers' Association (stands No. 299 and 300, Row S) and the

(*Concluded on page 632*)

PRICE BUILD-UP TO-DAY

By "CAIN"

THE basis for building-up a price for estimating purposes commences with the laying down of basic output (outlined in an article last week), and it is very necessary to arrive at the actual cost of employing labour. It should be noted that there is a pronounced difference between the Hourly Rates of Wages and what it costs the employer to employ labour by the hour, as will be gathered from the following :—

ACTUAL COST OF EMPLOYED LABOUR: "GRADE 'A'" WAGE RATES TAKEN

Average number of hours worked per man per year

	40 weeks at 46½ hrs. per week	= 1,860	
Less	1 week's holiday with pay and 3 Bank Holidays	= 72	
			1,788 hrs.
	12 weeks at 44 hrs. per week	= 528	
Less	2 Bank Holidays and 3½ days' sickness	= 44	
			484 hrs.
			2,272 hrs.

Labourer

	£ s. d.
2,272 hrs., less 3 per cent. for time lost owing to inclement weather. 2,203 hrs. at 2s. 2½d.	243 5 0
Time during inclement weather under Rule 2 (*a*) of W.R.A. = 69 hrs. at half pay	3 16 2
Workmen's Compensation Insurance at 30s. per cent. on wages	3 14 1
Builders' Federation Fees at 5s. per cent. on wages	12 4
Employer's contribution for :— s. d.	
National Health and Unemployment Insurance 2 10 per week	
Holiday with Pay Scheme 4 0 „	
6 10 for 51 weeks	17 8 6
	268 16 4

£268 16s. 4d. divided by 2,203 = cost per hr.

$$\frac{\text{£268 16s. 4d.}}{2{,}203} = 29.28\text{d. per hr.}$$

Actual hourly cost = 29.28d.

Bricklayer

	£ s. d.
2,272 hrs., less 3 per cent. for time lost owing to inclement weather. = 2,203 hrs. at 2s. 9d.	302 18 3
Time during inclement weather under Rule 2 (*a*) W.R.A. = 69 hrs. at half pay	4 14 11
Workmen's Compensation Insurance at 30s. per cent. on wages	4 12 4
Builder's Federation Fees at 5s. per cent. on wages	15 5
Employer's contribution for :— s. d.	
National Health and Unemployment Insurance 2 10 per week	
Holiday with Pay Scheme 4 0 „	
6 10 for 51 weeks	17 8 6
	£330 9 5

£330 9s. 5d. divided by 2,203 = Cost per hr.

$$\frac{\text{£330 9s. 5d.}}{2{,}203} = 36.0\text{d. per hr.}$$

Actual hourly cost = 36.0d.

Carpenter, Joiner and Plumber

	£ s. d.
2,272 hrs. at 2s. 9d. per hr.	312 8 0
Workmen's Compensation Insurance at 30s. per cent. on wages	4 13 9
Builder's Federation Fees at 5s. per cent. on wages	15 7
Tool money at 1s. per week for 50 weeks	2 10 0
Employer's contribution for :—	
National Health and Unemployment Insurance 2 10 per week	
Holiday with Pay Scheme 4 0 „	
6 10 for 51 weeks	17 8 6
	£337 15 10

£337 15s. 10d. divided by 2,272 hrs. = Cost per hr.

$$\frac{\text{£337 15s. 10d.}}{2{,}272} = 35.68\text{d. per hr.}$$

Actual hourly cost = 35.68d.

HEREUNDER IS A SUMMARY OF THE ACTUAL HOURLY COST OF ALL TRADES

Trade	*Grade "A" Wage Rate*	*Actual cost to Employer*
	d.	d.
*Labourer	26.5	29.28
*Timberman	27.5	30.32
*Mixer operator	27.5	30.32
*Scaffolder	28.5	31.36
*Bricklayer	33.0	36.00
*Bricklayer's labourer	26.5	29.28
Carpenter	33.0	35.68
Joiner	33.0	35.68
Plasterer	33.0	35.42
Plasterer's labourer	26.5	28.80
Plumber	33.0	35.68
Plumber's mate	26.5	28.80
Glazier	33.0	35.42
Painter	33.0	35.42

In calculating the above it has been assumed that men employed in the trades marked * lose time owing to inclement weather.

(*To be continued.*)

BUILDING QUIZ & BRAINS TRUST

THE London Building Trade Apprentices' Sports and Welfare Association has Mr. H. R. G. Montgomery to thank for arranging a "Building Quiz" this week at the Building Exhibition at Olympia. The "Quiz" form will cost 1s. for each attempt. Prizes of eleven guineas, seven guineas and three guineas are being given by the Organisers of the Exhibition, and the judges are : Mr. H. R. G. Montgomery, M.C. ; Mr. R. Nott, of the Building Centre ; and Mr. Ian Leslie, J.P., of *The Builder*.

There will also be a "Building Brains Trust," held on Tuesday, December 2, when the winner of the "Quiz" will be invited to become a member of the Trust. Admission tickets (price 1s.) to this Brains Trust are obtainable from the Building Apprentices' Sports Association Stand, No. 358, gallery, and the proceeds go to the Association. Any suggested questions for the Trust could be posted in the "Quiz" box on the Stand.

THE FOURTH BUILDING CONGRESS

RESEARCH AND PROBLEMS OF ORGANISATION

THE Fourth Building Congress was held under the auspices of the Building Industries National Council at Folkestone on November 18 and 19. The Congress was divided into four main sessions under the headings : (a) The Present Position ; (b) What Lies Ahead ; (c) Research and Training ; and (d) Problems of Organisation. A summary of the first day's proceedings, dealing with (a) and (b), appeared in last week's issue of *The Builder*. Below we give abstracts of the papers read on the second day.

RESEARCH AND TRAINING

Outlining the present position with regard to research and training in the building industry, PROFESSOR C. A. MACE, M.A., Head of the Building Research Unit, Medical Research Council, said :—

The right approach to this question of research is not, I suggest, in the first instance, a technical approach, but the approach of practical good sense. Building research, simply and rightly viewed, is nothing but the attempt to solve building problems. And this is what those engaged in the industry are doing every day, and nearly all the day, at every level from higher management down to the man who handles the material.

Some problems are so important that it is worth while to get someone to look into all the promising possibilities, to make experiments, and then to come back to the site with the results. If I am right in my approach, this gives us a guiding principle in all the varied problems with which a research organisation for the building industry would be called upon to deal. The principle is thus : Research begins, and it ends, on the building site.

But the principle points another moral which is not less important. Not only must the man on the job be research-minded ; it is not less important that the experts should be men with practical, realistic minds, and acquainted with the actual conditions under which the problem arises and under which the results of research have to be applied.

Take any representative problem. Take the first that comes to mind : What is the best size and shape for a brick ? And of what material should the brick be made ?

There are two ways in which you could make this a matter for research. The first is this : You could hand it over straight away to the scientists. But you can't leave it to the physicists, the chemists and the engineers to do the job alone. You will have to bring in the economists, the specialists in management and industrial techniques, and the representatives of the human and the social sciences. You have got to bring in the architects and you will have to bring in the industry as a whole. And if you have to bring them in at the end, why not have them in at the outset ?

This is the second approach. Building research began and it ends on the site, wherever it may go in between. Innovation must be grafted on to tradition. New discoveries must be an addition to what is already known ; and in the matter of building there is no denying that the building industry already knows a lot. The research team must include those who have this knowledge at their finger-tips. It must contain representatives of those who actually do the job. They have some of the essential data from which the experts must work.

These two lines of approach are not incompatible. We need both. There is a case for letting the experts go to work from first principles. They will make important contributions but they will not solve the problem. We also need the larger team in which the specialists are working side by side with those who actually do the job. It is, I think, mainly because it has adopted this second line of approach that the building industry has laid the foundation for a research organisation greatly in advance of what most other industries enjoy. It has included in its research teams, side by side with the physicists and chemists, economists, physiologists, and representatives of all the human and the social sciences, each of whom brings to bear specialised techniques of investigations appropriate to the extremely varied problem which the industry presents. It might claim, in fact, to offer the first example of the application to the cause of reconstruction of the type of research organisation developed in the cause of total war.

The Place of the Architect

Speaking on "The Architect and Technical Development," MR. ALISTER MACDONALD, F.R.I.B.A., said : Although in the recent past quite a lot of building work could and did unfortunately proceed without the help of an architect, it is increasingly becoming clear that in the building of the new Jerusalem in England's green and pleasant land, neither the building will be fair to look upon nor the planning worthy of the citizens unless architects are put in charge to create the designs which will, with beauty, be translated into bricks and mortar and modern structures by the designer's colleagues, the builder and the operative. The increased demand for architects of high quality training arises not only because man's thirst for beauty increases as qualitative education itself increases, but also because modern scientific requirements and discoveries require to be harnessed to building as well as to all the other activities of normal life. Nobody can deny that however efficient engineering may be, the beauty and humanity in a building can only be imparted by a man of artistic character who not only has studied how beautiful buildings were made in the past, but knows the elements of modern scientific calculations about such things as heat losses in walls and sound insulation in community buildings.

Architectural designing is not skin deep. It goes right through a building if that structure is really going to be a thing of beauty. Again, therefore, the architect is vitally interested in technical developments. And, in addition, it must be understood that he is the link between scientific research, building design and the consumer—the community whether private or public. The community looks to the architect as its designer to see that proper buildings are provided.

Technical development and beauty must go hand in hand if each is going to be perfect. The architect of to-day and to-morrow has an infinitely wide and exciting field of research at his disposal, and that is surely why his æsthetic sense will have an infinitely wider field of expression than did that of his predecessors. Some may think that the range of interests and subjects about which an architect should know a reasonable amount is too much for one man to absorb. They are pessimists. It may be that we have to work more in groups, but there always has to be a leader and there will always be progress in science that has to be assimilated. The fact surely remains that all the most lasting beautiful buildings have been designed by the equivalent of the present-day architect or a group of architects whose æsthetic sense has put his or other people's scientific knowledge into final and proper shape. In other words, the designer kept abreast of technical developments and did not just draw pretty pictures on his architectural board.

Building Management Science

MR. J. W. LAING gave the builder's point of view in technical development in a paper on "The Science of Building Management." He said : Scientific costing should be one of the four main supports in successful organisation. The best system is one which gives the production value of the work of each man each day. In some types of work that efficient system is possible and has been carried out with excellent results. But usually the best practical costing system and organisation is to divide the scheme, however large it may be, into the work of small squads, and to cost each small squad each day. We have proved to our cost that no length of experience or number of visual overseers can take the place of such a costing system. Numerous instances can be given to prove this. In harmony with the costing system we need an efficient tendering system. The men who make up the estimates and tenders for building and civil engineering work need to be most capable, with a good knowledge of the work. They must be capable quantity surveyors. It is impossible, however, to organise a building scheme well and efficiently, unless there is a flow of the correct materials at the right time, and to achieve this it is necessary there should be carefully prepared plans and details with bills of quantities before the work starts. Some drawings and details are a pleasure. They talk and tell the builder every detail. Conversely, there are some cases in which the drawings are so sketchy and ill-considered that even the long-suffering quantity surveyor has to give up the effort and put into his bill a considerable amount of work as prime-cost sums.

We now come to the most important and to the happiest side of building organisation, that is the human side of the science of building management, and to do this properly it is necessary to have a team whom you know and who know you. They know your capabilities, or otherwise, and the builder knows the capabilities of the different members of the team—the manager, the foreman and the leading workers. It is necessary that the members of the team should have confidence in each other and in the firm.

Operatives' Training

MR. J. W. STEPHENSON, President of the National Federation of Building Trades Operatives, spoke on "The Training of Operatives," and after describing the need for apprenticeship, the National Scheme of Apprenticeship, and the position of the adult trainee, he continued :

It is not my purpose here to discuss the machinery of apprenticeship and training, the means by which they are effected and perfected. But I feel that part of the means by which vocational training is brought to a fruitful conclusion (in a sense no training is ever concluded, as we are all

students gaining knowledge and experience in our ever-widening spheres of existence) lies in the spirit with which an apprentice or a trainee is received and aided. If we regard them both as assets and not accept them grudgingly as interlopers then the spirit of the schemes—the apprenticeship and adult training schemes—will have been properly safeguarded.

The curtailment of the building programme will not put an end to the need for apprentices. It may reduce their number, but there must be arrangements for the regular admission of youngsters to replace what is referred to as the normal wastage of the industry, caused by death and retirement. Any interference with, or curtailment of, proper facilities designed to cope with vocational training will have undesirable results from which it will take the industry a long time to recover, but the best apprenticeship scheme in the world, while it may attract lads, will not keep them in an industry if it is otherwise unattractive.

PROBLEMS OF ORGANISATION

SIR THOMAS P. BENNETT, C.B.E., F.R.I.B.A., said: There is a widespread feeling in the country that the building industry is producing less than it might be expected to produce with a million and a quarter operatives. It is, therefore, important to examine the conditions under which it is working to see whether there is any foundation for such an opinion.

The industry is faced with a large measure of Government control operated through a number of different Ministries.

It must be realised that in order to operate these controls it is necessary to employ technicians, *i.e.*, architects, engineers and surveyors. In the nature of things every technician approaches the problem with his own ideas of the solution, and these solutions are liable to vary substantially. In the case of men of capacity, and with the right mental approach, differences can be adjusted. In other cases the adjustment is a prolonged operation. It is, therefore, clear that multiplication of control, operated by different technicians, leads to a great deal of delay and a great deal of waste of labour in the preparation of the drawings. It is quite likely that this is so serious that it is causing the number of non-producers in the profession far to exceed the producers. When the contract is finally let the drawings, which should be completed in every detail, are found to be lacking in important respects, sub-contracts are not complete and delays and disorganisation tend to creep in. It is essential that in some way or other this complicated machine should be simplified.

The Ministry of Health is the right Department to control local authorities and decide upon the size of permitted programmes. The Ministry of Works should deal with all physical details of building, approve the schemes, the cost and the construction. Much greater freedom to decide detail should be entrusted to the local authorities. Greater responsibility should be placed on the architects, surveyors and engineers, who are preparing the drawings and supervising the work. I would, therefore, considerably limit the control of the Ministry of Health on the technical side of house and flat building, and give very much greater freedom of action to the local authority and the technicians employed. Financial control on a budgetary basis should still remain with the Ministry of Health.

In spite of all the difficulties of working to-day, it is possible in the professional office to complete the drawings before the contract is started. This means a longer gap between the time at which the project is envisaged, and the time at which the contract is let. It means more staff and it means harder work in endeavouring to co-ordinate all the many controls with which the architect, the engineer and the surveyor are faced, but if the building industry is to function properly, it must be a cardinal factor in the whole machinery that the professional work is done as faultlessly and as thoroughly as possible before the building is started. I would like to add to the bills of quantities a completed schedule of materials ready for ordering by the builder. At the date at which the contract is let, or soon after, the whole of the sub-contracts should be let, tenders having been obtained by the architect in the course of the preparation of his drawings.

One of the things that operate against efficiency of professional work is the fact that many applications for licences remain for a long time in suspense and when granted have a time limit of two months before they lapse. This tends to make the professional office carry a number of contracts which are partially complete, and to be rather caught on the wrong foot when the licence is suddenly issued. The period between the application of licence and granting should be materially shortened by more efficient work, on the part of the Ministries, and the period before it lapses should be longer.

The Quantity Surveyor

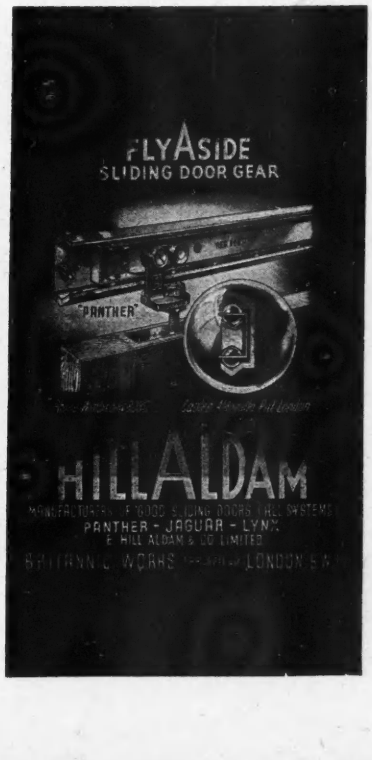
In describing the part that the quantity surveyor can play in building organisation, MR. HORACE W. LANGDON, F.R.I.C.S., said: We quantity surveyors have many opportunities of discovering wastage; we know that inferior materials involve far greater expenditure of labour. The wastefulness of using out-of-date machines; architects—who cannot make up their minds—who never seem to have any co-ordinated plans until after the completion of the work—involve everyone in unnecessary expenditure. The quantity surveyor whose quantities are unreliable or who is slack in the performance of his duties not only adds considerably to the pricing of a bill of quantities but throughout the course of a contract causes unnecessary cost to both owner and contractor. Specialists and sub-contractors, for want of co-ordination, cause each other and the general contractor a great deal of trouble and the owner much additional expense. We know that the output per operative to-day is far less than that of his counterpart of 50 years ago.

The quantity surveyor rarely has an opportunity of placing his specialised knowledge before the owner, the architect, or the contractor. The quantity surveyor, if asked, could offer many suggestions and, moreover, could assist in the solution of many problems.

Too often the quantity surveyor is not given an opportunity of discussing a scheme until both the owner and the architect have expended several months upon it.

Immediately the architect is instructed by the owner, or rather immediately after he has had an opportunity of surveying the site, the quantity surveyor should be called in. If the architect would discuss his preliminary sketches with the quantity surveyor, obtaining approximate estimates for various alternative methods of construction and, in particular, an approximate estimate of the final total cost, the architect would be saved many headaches and much unnecessary work.

The quantity surveyor has established himself as a person of considerable value within the industry. There is much more he can do, and will do if he is given the opportunity. His value on the actual site of a building contract cannot be overestimated. A quantity surveyor may have provided in his bills of quantities for work for which, during its progress, other and more economical ways may present themselves. It is the quantity surveyor's duty to call the attention of the architect to every possible means of saving money in the course of the contract. The less an individual contract costs, the more contracts there will be.



Builders' Problems

In considering the problems of organisation of builders, MR. NIGEL HANNEN, B.A., M.I.O.B., said: Preparation in advance is essential to the good organisation of a builder's business, and although it may be flexible within limits, it cannot be turned on and off or suddenly diverted to other work. In 1944 the Central Council for Works and Buildings produced a Report on the placing and management of building contracts. The Report made a special point of the importance of pre-contract preparation, and this should always be driven home as an essential to good organisation. Builders are often accused of lack of organisation, but many builders have reasoned that it is better to have a resilient lack of organisation than one carefully planned but constantly thrown out of balance.

A builder is dependent on so much outside his own business, and even outside the industry. He builds for every kind of client on the client's own site, wherever that may be. He draws on all other industries for his components, materials and transport, while his labour is also used in many other industries. Let us stress again, therefore, the necessity for full information at the earliest possible moment, so that he has a chance to organise his business.

In most parts of the country there is considerable difficulty in obtaining labour and maintaining the requisite force to carry out a job efficiently.

Before starting any contract to-day, a progress chart and a phased labour programme must be prepared. Consideration

is given to what labour is available from the firm's other jobs, or jobs closing down in the vicinity, and details of the requirements lodged with the local Ministry of Labour Exchange.

At present the available labour is spread over too wide a field, but if jobs are to be telescoped it must be remembered that, with properly balanced gangs, trades follow each other in carefully planned sequence. If no new jobs are started whole trades would be thrown out of work, beginning with the excavators.

Quite apart from the shortage of manpower, there is a restlessness which results in a very big turnover of labour on the jobs, sometimes 200 per cent. in a few months, while a third of those taken on leave in less than a week for one reason or another.

Within the industry, offers of unauthorised rates of wages and overtime, or even rumours of such, contribute to the restlessness. Moreover, there is a constant drift of men to factories or luxury trades which can afford to offer high wages and provide welfare conditions impossible on building sites, and other enticements.

Speaking as a builder, I consider that to obtain efficiency in the industry in the present circumstances :—

(1) Sufficient notice must be given of changes in priorities for builders and manufacturers to adjust the disposition of their works.
(2) Closer attention should be paid to the availability of articles specified, and a more uniform and simplified procedure adopted by authorities issuing licences, to avoid delays.
(3) Tender lists should be shorter and the number of builders restricted, to make the best use of personnel.
(4) Co-operation and good will are in the mutual interests of employers and their operatives. Those who knowingly cause friction between management and men break up the productive efforts of both.

Distribution

Speaking on "Distribution and Transport Problems," SIR DUDLEY PRYKE said with regard to the correct phasing of deliveries : There may have been a period when it was possible for a contractor to assemble on the site most of the materials and fitments well in advance of the time they would be required and that fact coupled with a certain inherent optimism as to the rate of progress of the work may account for the complaint that delivery is often demanded in greater quantities and at earlier dates than the materials and fitments can be used. Rightly or wrongly, it is said that local authorities are particularly addicted to this practice. Where the desirable situation mentioned can now be achieved in whole or in part, such advance provision in a time of shortage must necessarily be made at the expense of other jobs waiting for the same goods.

One remedy for this state of affairs might be to slow down or suspend the building of any further houses until the supply of materials and fitments had overtaken the demand. This, however, would seem to be a somewhat heroic remedy and might not be politically possible. The alternative and more obvious alleviation of the situation in a time of shortage would be a more careful phasing of deliveries required under housing contracts, based upon a realistic estimate of the probable progress of the work of building. This would imply an accurate forecasting of materials required many weeks ahead of the time when they would be required for use, and the placing of orders for both materials and fitments for forward delivery immediately the contract had been settled.

Such a procedure would be well worth while. It would obviate the locking up of considerable quantities of materials on sites where for one reason or another the work is held up, would assist contractors to obtain their supplies when they were ready to use them, would assist suppliers to meet contractors' requirements in time to save delay due to the non-arrival of vital components and would ensure the utilisation of available supplies to the greatest possible advantage. The work involved would undoubtedly fall upon the building contractor in the case of housing contracts under local authorities, owing to the lack in the offices of many authorities of the necessary technical knowledge to check the estimated rate of progress of the building work.

IN PARLIAMENT

Temporary Houses.

MR. KEY, the Minister of Works, in moving the second reading of the Housing (Temporary Accommodation) Bill, which increases the funds to meet the cost of the temporary housing programme from £200,000,000 to £220,000,000, said that the number of temporary houses allocated to local authorities was 156,667—124,511 for England and Wales and 32,156 for Scotland. Some 54,000 were of the aluminium type which the Ministry of Supply was manufacturing and erecting. The Ministry of Works was responsible for the remaining 102,000, made up of some seven principal types. The number of temporary houses still to be completed at the end of October was 24,184, of which 17,500 were aluminium, and they should be completed by next May. The remaining 1,900 of other types for England and Wales should be completed by the end of next month, but the 4,700 for Scotland were unlikely to be finished before next summer. The total estimated cost was now £217,000,000, an increase of £39,000,000 over the estimate prepared when the White Paper was published in October, 1945. Wage rates had increased by 11 per cent., and these, with the increased cost of fitments, involved an additional £11,000,000 for preparing sites, erecting houses and supplying fitments for the houses provided by the department. Other substantial increases were in the cost of distribution and transport, amounting to £7,500,000, and additional storage and handling due to accumulation of stocks, costing about £8,000,000. An increase of £13,500,000 came from the aluminium house, which was now estimated to cost £1,610. It had always been known that this house would be more expensive than the ordinary type of temporary house, but with very little data upon which to base estimates, the cost of materials, labour and overheads had been considerably under-estimated, and the position had been accentuated by the rising cost of fitments. The saving in building labour had fully justified the inclusion of the aluminium house in the programme.

In the debate which followed, MR. GEORGE HICKS expressed deep concern about the selection of the aluminium house. He said that £1,610 was a ridiculous price to pay for it. The building industry had some right to complain about indecision and the frustration they had suffered. Permanent houses built in brick which would have lasted 90 or 100 years could have been built much more cheaply. He could not congratulate the Government on the way in which they had handled this task.

A number of other members also took this view. MR. MARPLES complained that the Government had been in office for two years, and yet had not organised their distribution centres.

MR. DURBIN, the Parliamentary Secretary to the Ministry of Works, in reply, explained that 40 per cent. of the increased cost of aluminium was due to changes in the aluminium content, 35 per cent. to the increased costs of components, and 20 per cent. to overhead charges through delay in the programme. The history of the figures showed that there had been gross under-estimating, but it was less in degree than the under-estimation in the period between 1944 and 1945. A large part of the under-estimation and the increased costs was the result of the speed with which ambitious industrial enterprises were launched without the necessary preparatory work. The appearance of high cost was in part illusory, because, although the aluminium houses were legally temporary, they were technically and physically capable of a much longer life than 10 years. There were also economies in skilled labour on the site and in scarce materials.

The Bill was read a second time.

Building Materials.

MR. KEY, in reply to Mr. Vane, said he was aware of difficulty in obtaining cast-iron spouting and rainwater guttering, and Regional Officers would do all they could to assist in meeting priority needs if they were given details of specific cases. Supplies were limited by the shortage of labour and machinery, but he was in consultation with the industry upon the possibility of increased output.

MR. EMRYS HUGHES asked the Minister of Works if he was aware that there was a shortage of plasterboards for municipal housing.

MR. DURBIN said that as a result of the steps taken by his Ministry the output of plasterboard had risen by 25 per cent. during this year, and further large increases of capacity were coming into production in the near future, subject to the availability of imported pulp for the paperliner.

Stacking Charges for Bricks.

MR. MARPLES asked the Minister of Works for what reason in S.R. and O., 1947, No. 1,641, provision was made for an increase in the stacking charges for bricks at a rate 100 per cent. above the average rate for a similar service preceding September, 1939; and how much of this charge was due to increase in labour costs and how much to lower productivity.

MR. KEY said that the increase was accounted for by the increase in labour costs without assuming any fall in productivity.

Building Licences.

MR. LEVER asked the Minister of Works whether he would give instructions that licences for building work upon bomb-damaged premises should be withheld except where the premises were to be used for essential purposes, or the amount involved was very small.

MR. KEY said he could not lay down a general prohibition of that kind. Each case was considered on its merits, while account must also be taken of such important factors as the availability of labour and materials for particular types of work.

Welsh Slate Industry.

MR. KEY, in reply to Mr. Goronwy Roberts, said that steps had already been taken to implement all the main recommendations of the Report on the Welsh Slate Industry, except the proposals for financial assistance to this industry.

Timber Imports.

MR. H. WILSON, replying to Mr. Boesom, said imports of hewn, sawn and planed or dressed softwood were 374,476 standards in the first six months of 1947, as compared with 273,299 standards in the corresponding period of 1946. This material had a wide range of uses other than constructional, but a substantial proportion would be suitable for the latter purposes.

MR. PARKIN asked the President of the Board of Trade if he would give an approximate timber budget for the next 12 months, indicating the amounts required to cover the present housing programme, other building, allocations to the furniture industry and other uses.

MR. H. WILSON said he was afraid that it would be impracticable to prepare a timber budget such as that suggested at present as, apart from other considerations, the quantities of timber which would be available for export in several of our most important overseas sources of supply and also the level of prices were not yet determined. Our timber imports in the coming years were, however, likely to be limited by currency rather than by availability and the cuts which had already been announced would mean that imports would fall short of essential requirements.

"PRESENT-DAY PROBLEMS OF THE BUILDER"

Mr. E. J. Smith's Address to Chartered Quantity Surveyors

THE dangers of applying detail planning to the building industry at the present time were mentioned by MR. E. J. SMITH, President of the National Federation of Building Trades Employers, when he addressed a meeting of quantity surveyor members of the Royal Institution of Chartered Surveyors on November 26. We take the following extracts from Mr. Smith's remarks :—

The builder, whether contractor or speculative house builder, is by tradition an individualist, and like all other industrialists in this country suffers Governmental control and intervention in industry with an ill-grace, and yet we have a Government whose policy seems to consist to a large extent of what I would describe as planning in the worst sense, *i.e.*, the planning in detail of the post-war world. In present-day conditions, when crisis succeeds rapidly to crisis, such detail planning is bound, in my opinion, to break down. And how can a builder conduct his operations with efficiency on behalf of his clients and with profit to himself so long as that policy, which must be one of expediency, remains? I recognise that some measure of central planning may be necessary; but it should be of the most general nature; otherwise the spirit of personal initiative on which private enterprise in the building industry is based will be destroyed.

Our worst trouble, and it cuts across everything, is uncertainty. To give of his best and to get the best out of his men, the builder must be able to see ahead and must have a reasonable expectation of continuity of work. As things have been, and still are, there is no certainty even in respect of a particular job that either the materials or the labour will be forthcoming when required, and, if it is a job for a Government Department or a local authority, the possibility that the work might at any time be stopped cannot be excluded in these days of crisis. And there is no guarantee of continuity of work. I do not want to be pessimistic, but we all know that most of our building materials make heavy demands on fuel, and we are, therefore, most concerned lest the export programme may run into heavy weather. If it does, and the Government were forced to export coal, I am afraid that it would be the manufacture of building materials which would suffer.

The Problem of Materials.

Of our day-to-day problems the worst is that of materials. Timber and steel have always been short, bricks have never been easy, and during the past summer when we have had ideal building weather there have been frequent hold-ups owing to an acute shortage of cement. And, unfortunately, this problem of materials has itself created for the builder the twin problems of controls and forms. Neither builders nor their men can do efficient work until there is such a plentiful supply of materials that once again the builder can rely on the materials he requires arriving in the right quantities, in the right places and at the right times. Until this stage is reached it is difficult to maintain that all controls and forms should be abolished. But they should and must be reduced and simplified.

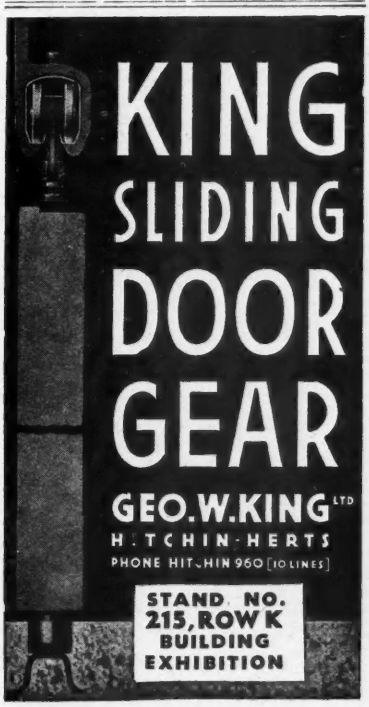
I will say no more about materials and controls. But as regards forms I am glad to acknowledge that the Minister of Works is doing his best to reduce their number and to simplify those that are left. I wish I could say the same about the Board of Trade! I agree that it is necessary that certain basic information about our work should be collected, but I believe in moderation in all things! The proposed new forms are, of course, being strenuously resisted by my Federation, and I am hopeful that our representations will be successful.

Problem number two is labour. Owing to uncertainty it is difficult if not impossible to build up teams to the state of efficiency reached before the war, and it is, in any case, impossible to get full output on the site unless the men see that ample supplies of materials are coming in.

Measures have been introduced to get rid of the dead-wood of war-time labour arrangements and to substitute fairly stable arrangements appropriate to post-war conditions. They have had a large measure of success, and their efforts have been supported by the joint efforts, under a National Joint Production Council, to foster increased production, and also by the action taken to secure properly trained manpower for the industry by apprenticeship and adult training schemes.

But stability by itself is not sufficient. Having secured a fairly stable basis from which to start, and having removed as many uncertainties as possible within our limited powers, employers in the industry felt that greater output and reduced costs could only be achieved by adopting a scheme of payment by results. Opposition was to be expected and was met from the trades unions, but recently a settlement was arrived at which enables payment by results to be operated in a flexible manner.

You may think that by this decision we have created new difficulties. This may be so, but we are entitled to view the situation with some confidence, because both employers and operatives are pledged to assist in making these arrangements work well, and it is in their interest that they should. Unless they succeed I do not see how we are likely to get the full production which is necessary if we are to maintain even the present low standard of living.



Implications of Full Employment.

Much more emerges from the policy of full employment than the need for substituting incentives of a positive character for the admittedly anti-social and negative incentive of pre-war days—the fear of unemployment. The policy is bound to have a serious effect on the organisation of jobs, and will, I submit, increase costs, perhaps considerably. As I mentioned earlier, there must be a sufficiency of materials if jobs are to be properly organised. I suggest that the same consideration applies to labour. On practically every job both the types and numbers of operatives are changing almost from day to day. Before the war there was, as with materials, a stock in hand, the unemployment pool, on which the contractor could draw at very short notice. Under a policy of full employment there can be no such reservoir. Whether the employer discharges men and is held up later because he cannot get replacements when he wants them, or retains men whom he should discharge in order to be sure they are there when he wants them, there will be increased cost on the job for which the builder cannot justly be blamed. It must be faced as part of the price always to be paid for any measure of social reform, and must be set off against the sums previously paid by way of unemployment benefit.

Many difficulties arise at the present time because, compared with pre-war days, a much larger proportion of our work is carried out for local authorities. I am a great admirer of the local government machine, but we builders find that the machine works very slowly both in the matter of letting contracts and, after work has begun, in changing the specification when one or more of the materials originally specified cannot be obtained. In the first case, the delay is aggravated by the fact that the authority have to get the approval of the Ministry of Health, which often leads to long drawn-out negotiations which could, I am sure, be avoided if there were greater delegation of central responsibility. In the latter case the authorities must take the blame, because Mr. Bevan has, on several occasions, exhorted them to give greater powers to the man on the spot.

I fully realise that the quantity surveyor may be predisposed in favour of planning, and I have, I hope, already made it clear that I do not object to proper planning in present conditions. But I do maintain that the activities of the building industry are too complicated, too vast, to be centrally controlled in detail.

Contract Conditions.

One way of lessening our difficulties is to ensure, first, that building works are carried out under standard conditions of contract and, secondly, that those standard conditions are agreed conditions. Thanks to the Joint Contracts Tribunal, whose authority in the industry is being increasingly recognised, there are not now, or at least there need not be in the future, any differences of opinion within the industry regarding the conditions of contract under which building works should be undertaken. Most local authorities, as well as private clients, now use the Standard Form of Contract, and we should all combine in persuading the rest of them to do so.

Although, as I have already mentioned, there is an agreed Standard Form of Contract for the building industry, it is still sometimes found that quantity surveyors are disposed to insert in the bills of quantities conditions which either conflict with, or place on the builder a liability beyond that imposed by, the General Conditions of Contract. You will, I feel sure, agree that the advantages of an accepted Form of Contract Conditions are largely negatived by practices of this kind.

Again, some, but all too few, drawings are sufficient, telling the builder every detail he requires to know. But there are, alas, others which are so sketchy and ill-considered that the long-suffering quantity surveyor is forced to put into his bill a considerable amount of work as prime cost sums. Such schemes are "designed"—if one may use the word—as the work proceeds. What is the result? The building owner cannot know the extent of his liability; the builder cannot order materials and organise intelligently, and the workmen cannot work effectively.

MINOR EMERGENCY REPAIRS

BUILDING MATERIALS AND COMPONENTS PRIORITY DISTRIBUTION SCHEME

The Minister of Health in Circular 113/47 refers to Circular 140/47 on the subject of the new scheme for the priority distribution of certain building materials and components, and states that it has been decided, in the light of experience, to modify the arrangements so as to enable priority materials to be acquired for emergency repairs of a minor character without the necessity of obtaining a priority certificate. The revised arrangements, which apply only to minor emergency repairs and come into effect forthwith, are set out as an Appendix.

APPENDIX.

The procedure detailed in paragraph 22 of pamphlet B.M. 107 is giving rise to excessive clerical work and delay in connection with minor urgent repairs. It has therefore been decided that, within the limits of quantities specified below, merchants may supply goods without formality if they are satisfied that an emergency repair is involved.

Merchants should keep a record of the addresses for which these goods are required, and at the end of each calendar month the Regional Materials Distribution Officers of the Ministry of Works will issue symbols to enable the merchants to replace such goods on a priority basis. Beyond the limits specified below the arrangements described in paragraphs 22 and 23 of B.M. 107 will apply according to circumstances.

In their own interest contractors should keep their demands to the minimum, and merchants should not supply unless they are satisfied of the urgency.

Description.	*Unit.*	*Maximum quantity that may be supplied for use at one address without certification.*
Hardwall plaster ...	Cwt.	1/8th
Domestic type lavatory basins	Nos.	1
W.C. pans	Nos.	1
Lead sheet not less than 3 lb. nor more than 5 lb./sq. ft (for building only) ...	Cwt.	1/8th
Lead pipe not less than ½-in. bore nor exceeding 4-in. bore (for building only)...	Lin. ft.	6
Copper pipe (for building only)	Lin. ft.	6
Clear sheet glass 18-oz. to 32-oz. in sizes exceeding 144 sq. in. ...	Sq. ft.	10

HOUSING PROGRESS

RECORD RETURN FOR OCTOBER

Details contained in the October housing returns (Cmd. 7261, England and Wales, price 10d., post free, Cmd. 7262, Scotland, price 4d. post free, Stationery Office) show that the number of permanent houses completed in Great Britain during October was 15,398, which compares with 14,203 in September—the previous highest figure. With the 5,376 temporary houses completed during the month, a total of 20,774 houses were finished in October; 296,924 houses have now been completed (164,873 of them permanent, including 54,567 by private enterprise), 268,622 are under construction (261,826 permanent) and 108,144 (87,623 permanent) are projected but not begun.

Production figures for building materials during October and September were :—

	Oct.	*Sept.*
Cement ..... (1,000 tons)	817*	628†
Plasterboard (1,000 sq. yds.)	4,422*	3,477†
Bricks ..... (millions)	461*	438†
Plaster, gypseous (1,000 tons)	20.0*	15.9†

* 5-week period. † 4-week period.

The total labour force employed on construction or repair of houses fell during October from 569,200 to 569,000; 262,700 men were engaged on permanent housing and preparation of housing sites, compared with 259,800 at the end of September.

Also issued is Housing Return for England and Wales (Appendix B), showing the returns by individual housing authorities.

Demolition Wages Increases.

The Demolition Industry Wages Board has agreed that in England and Wales, from the beginning of the pay week next following November 16 and in Scotland from November 17, the basic rates for all operatives in the demolition industry are as follows :—

Grade	A	A1	A2	A3
	s. d.	s. d.	s. d.	s. d.
Rate ...	2 2½	2 2	2 1¾	2 1¼

London District : Within the 12-mile radius : 2s. 3¾d. From 12 to 15 miles radius : 2s. 3¼d.

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WHAT'S NEW AT THE EXHIBITION

(*Concluded from page 627*)

ingeniously designed units shown by Peerless Built-in Furniture, Ltd. (stand No. 260, Row O), who also show a new larder unit with ventilated sections and an "Electrolux" refrigerator (the latest models of the latter are shown by Electrolux, Ltd., on stand No. 291, Row R). Another exhibit that merits attention is the "Newsum" tradesmen's delivery hatch, with self-locking compartments for bread, meat and milk. It can be seen on the stand of H. Newsum Sons and Co (No. 159, Row H).

Some Other Exhibits

Among water supply and sanitary appliances there is nothing very new that I noticed. The new taps—the "Shaff," the "Twin-Seal" and the "Supatap"—are not represented. There are, however, two examples of mains-operated flush valves for w.c.s. These are common in the States but are not allowed by many water supply authorities in this country, including the Metropolitan Water Board. They are certainly very neat devices, giving a full flush without the customary noise of a cistern refilling. These valves are operated either by pressing a button or by turning down a short lever. One of them—the "Victory"—is shown in operation on the stand of Associated Clay Industries, Ltd. (No. 178, Row J); the other—the "Handy"—on the stand of B. Finch and Co. (No. 13, Row A). Plastic cisterns with a silent flush are shown by Shires and Co. (London), Ltd., on stand No. 28, Row B.

Many other exhibits deserve mention, but cannot be dealt with owing to limitations of space. There are, for example, the exhibits of the portable electric tools—drills, hammers (including a new model "E" Kango hammer), saws, planes, etc.—which are already being extensively adopted in this country, and seem likely to come into general use in the near future.

For wood-working, the familiar fixed machines perform the main duty, but there are many occasions when portable machines are most convenient. Among those to be seen at the Exhibition are the "Wall-Ace" portable saw bench driven by a 3½ h.p. petrol engine (Middlesex Contractors' Plant, Ltd., stand No. 147, Row H), and a smaller version of a similar machine, the "Multico," driven by a petrol engine or electric motor (Armand Dutry and Co., stand No. 236 D, Row L).

I also noted the "Nufloor" surfacing machine (Floor Renovations, Ltd., stand No. 187, Row J); the Rawlplug fixing devices (stand No. 227, Row L), including the new "H" toggle; the "Homestic" gear for silent sliding interior doors (George W. King, Ltd., stand No. 215, Row K); and a built-in recessed curtain track for concrete or wood lintels (Thomas French and Sons, stand No. 94, Row E).

Altogether, with more than three hundred stands, there is much to see at Olympia.

L.M.B.A. Handbook.

All sections of the building trade will find the 1947 Handbook of the London Master Builders' Association a comprehensive medium of reference. Attractively bound, it gives the names and addresses of the elected officers and members of the Executive Council, and the item "Memoranda for Builders and Contractors" has been carefully revised and, as far as possible, brought up to date. A full list of members is included, as also is the Working Rule Agreement as approved by the London Regional Joint Committee of the National Joint Council for the Building Industry.

THE SCOTTISH BUILDER

NEW BUILDINGS

Dunfermline.—Dean of Guild Court approved plans for 120 houses at Burnside-st., Rosyth, at £147,181.

Glasgow.—Alterations and additions for D. Elder, Ltd., at 40/46, St. George's-rd., for which the architects are Monro & Son, 307, West George-st., Glasgow. Alterations and additions proposed for Tennents, Ltd., for which the architect is T. Cordiner, 261, West George-st., Glasgow. Alterations, etc., at Royal Cancer Hospital, for which the architect, etc., are Jackson, Brown & Son, 307, West George-st., Glasgow..

Glasgow.—New school buildings proposed at Sussex-st., also at McAuslin-st., for which the architect is John MacNab, 129, Bath-st., Glasgow.

Hamilton.—Dean of Guild Court approved plans for extensions to buildings at Factory-rd., for Anderson & Robertson, at £17,350; extensions to works canteen at Robberhall-rd., for Anderson Boyes & Co., Ltd., at £4,000.

Lanarkshire.—New factory, No. 7, at Queenslie, for which the architects are Boswell & Partners, 206, West George-st., Glasgow.

Larkhall.—New coachpainting and spraying works, etc., for which the architect is W. McQueen, Allanbank, Ashgillhead.

Perth.—New school buildings proposed at £125,000, for which the architect is I. Moodie, Perth and Kinross Education Officer, Perth.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

DECEMBER 6.

†***Essex C.C.**—Alterations, repairs and redecorations at "Passmore Edwards" Convalescent Home, 109, Marine-parade, Clacton-on-Sea. Approx. cost, £7,500. H. Conolly (F.), County A., County Hall, Chelmsford.

†***Essex C.C.**—Additional hutted classrooms at Upminster Cedar-ave. School. H. Conolly (F.), County A., County Hall, Chelmsford.

DECEMBER 8.

Chesterfield R.D.C.—20 Airey houses at Ducksett-la., Eckington Central estate. J. B. Wikeley, E. and S., Rural Council House, Saltergate, Chesterfield. Dep. £2 2s.

Hemel Hempstead T.C.—Conversion of Chaulden House, Chaulden-la. into s.c. flats. L. de Soissons, A.R.A. (F.), Midland Bank-chbrs., Welwyn Garden City. Dep. £2 2s.

Strabane R.D.C.—56 houses with roads and sewers at 2 sites. W. S. Moody, C., Union Office, Strabane. Dep. £2 2s

DECEMBER 9.

***Brentford and Chiswick T.C.**—Rebuilding caretaker's cottage, Beverly-rd. infants' school, Chiswick B.E. and S. Dep. £2 2s.

Ches. C.C.—Kitchen and dining room and removal of shelters at Wistaton Country Primary School. E. M. Parkes, County A., The Castle, Chester. Dep. £2 2s.

Cheshire C.C.—Temporary classroom accommodation at Bebington, Stanton-rd. County Primary School. E. M. Parkes, County A., The Castle, Chester. Dep. £2 2s

Cheshire C.C.—Dining room and servery at Hyde, Flowery Field Modern Secondary School. E. M. Parkes, County A., The Castle, Chester. Dep. £2 2s.

Norfolk E.C.—3 permanent classrooms and cloakrooms at Hellesdon Modern Secondary School. F. G. Limmer, Ed. Architect, Stracey-rd., Norwich. Dep. £2 2s.

Rickmansworth U.D.C.—Alterations and additions to old Civil Defence control centre to form offices. S., Council Offices. Dep. £2 2s.

DECEMBER 10.

Cheshire C.C.—Reinstatement and completion of construction of Sale Cecil-ave. Modern Secondary School for Girls. E. M. Parkes (F.) County A. Dep. £2 2s

Clutton R.D.C.—16 houses at 3 sites. Thomas and Morgan and Partners, Architects, 23, Gelliwastad-rd., Pontypridd. Dep. £3 3s.

†***Enfield U.D.C.**—Temporary offices. Frank Lee, A.M.Inst.C.E., E. and S., 7, Little Parkgdns., Enfield. Dep. £2 2s. Tenders by January 6.

DECEMBER 11.

Bingham R.D.C.—10 houses with external site works, Contract "Bingham No. 2"; 12 houses with external site works, Contract "Radcliffe-on-Trent No. 2." C. W. Kendrick, S., Council Offices, Bingham, Nottingham. Dep. £2.

DECEMBER 12.

Aysgarth R.D.C.—2 houses at West Burton. J. Hartley and Son, Chartered Architects, Swadford-chbrs., Skipton, Yorks.

Skibbereen U.D.C.—10 houses at Upper Bridge Street. P. Murray. Acting T.C., Town Hall. Dep. £1 1s.

†***West Sussex C.C.**—(1) Erection of 5-class junior girls' school adjacent to Davis Estate, Horsham (Job No. 188); (2) erection of 3-class Junior and infants' school adjacent to Whyke Housing Estate, Chichester (Job No. 187). F. R. Steele (F.), F.R.I.C.S., County A., County Hall, Chichester.

DECEMBER 13.

Cornwall Combined Police Authority.—5 pairs of police houses at Trevethan-la., Falmouth. S. Pool, County A., County Hall, Truro. Dep. £3 3s

East Barnet U.D.C.—Extensions to four-bay transport garages, Leicester-rd. E. and S., Town Hall, New Barnet, Herts.

***Tredegar U.D.C.**—(a) Bryn Pica Housing Site: (1) site preparation; (2) erection of 122 Airey houses; (b) Tramroadside Site: (1) Site preparation; (2) erection of 28 Airey houses. S., Council Offices, Bedwellty House, Tredegar. Dep. £3 3s.

DECEMBER 15.

Banstead U.D.C.—Temporary offices at The Council House. S., Council House, Brighton-rd., Banstead. Dep. £2 2s.

Nottingham T.C.—6 staff cottages with site works and services at City Mental Hospital, Mapperley. City E. and S. Dep. £2.

Salford T.C.—Reconstruction of Courts at Town Hall. City E. Dep. £3 3s.

Southport C.B.—Rebuilding lavatory accommodation and cloakroom block and other incidental works at Farnborough-rd. Primary School. Chief Education Officer (Building Section), 1, Eastbank-st. Dep. £2 2s.

DECEMBER 16.

Bath T.C.—Foundations for preliminary site works of new Junior and Infants' School at Fosseway Odd Down. Tew and Oliver (F. and A.), 7, Northumberland-bldgs., Bath. Dep. £2 2s.

Bath T.C.—Erection of super-structure of new Infants' School at Moorlands estate. W. G. Nixey, F.R.I.C.S., 18, Charles-st., Bath. Dep. £2 2s.

DECEMBER 17.

Cornwall Combined Police Authority.—5 pairs of police houses at Trevethan-la., Falmouth. S. Pool, County A., County Hall, Truro. Dep. £3 3s.

***Watford T.C.**—Alterations and adaptations at 14, High-st. B.E. and S. Dep. £2 2s.

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DECEMBER 22.

***Beckenham T.C.**—Alterations and additions to form stores and artistes' rooms at Public Baths. B.E. and S. Dep. £2.

***Beckenham T.C.**—Repairs to corporation houses at Elmers End estate (Contract No. 4). B.E. and S. Dep. £2.

DECEMBER 23.

***Lincoln (Parts of Kesteven) C.C.**—Pair of police houses at Hervey-rd., Sleaford. C. B. Metcalfe (F.), County A., County Offices, Sleaford.

JANUARY 5.

Wicklow U.D.C.—80 houses with roads and sewers, etc. Town Hall, Wicklow. Dep. £10 1s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

DECEMBER 5.

†**Notts C.C.**—C. (Materials).

DECEMBER 10.

Buxton T.C.—B.E. (Materials).

ROADS, SEWERAGE AND WATER WORKS

DECEMBER 8.

Aireborough U.D.C.—Making-up Hawthorn-dr., Yeadon. E. and S., Micklefield House, Rawdon. Dep. £2 2s.

Cuckfield R.D.C.—Site preparation at Cuckfield-rd., Hurstpierpoint. A. Hutchings, M.I.M.Mun.E. and S., Boltro-rd., Haywards Heath. Dep. £2 2s.

East Barnet U.D.C.—780 lin. yds. of 48-in. dia. storm-water culvert, etc. E. and S. Dep. £2.

***Glanford Brigg R.D.C.**—Street sewer at Kirton-in-Lindsey. Buttrick and Buttrick (F. and A.), 43, Oswald-rd., Scunthorpe. Dep. £2.

Salford T.C.—1,400 lin. yds. of 18-in. to 36-in. dia. concrete pipe sewer, etc., at Duchy-rd., Pendleton. City E.

Tadcaster R.D.C.—Roads and sewers at Maple-ave., Bishopthorpe. Anthony Steel and Owen, Astragal House, 199, Anlaby-rd., Kingston-upon-Hull. Dep. £2 2s.

DECEMBER 9.

North Riding C.C.—Surface dressing of about 500 miles of roads. County S., Northallerton.

DECEMBER 10.

Braintree R.D.C.—Roads and sewers at Gt. Bardfield. L. A. B. White, S., Council Offices, St. Peter's-ct., Bocking, Braintree. Dep. £3 3s.

Bucklow R.D.C.—Roads and sewers at Chapel-la., Millington. E. and S., 26, Station-bldgs., Altrincham. Dep. £2 2s.

Stoke-on-Trent T.C.—Roads and sewers at Abbey Hulton No. 3 site. City E. and S. Dep. £3.

Wells R.D.C.—Excavation for and laying and jointing of about 386 lin. yds. of 4-in. and 625 lin. yds. of 3-in. dia. asbestos cement water mains, valves, etc. I. R. Morgan, E., Council Offices, Wells. Dep. £2 2s.

DECEMBER 12.

Cirencester R.D.C.—2,000 lin. yds. of 4-in. dia. and 1,950 lin. yds. of 3-in. dia. spun-iron water mains, etc. A. H. S. Waters, M.I.C.E., 25, Temple-row, Birmingham 2. Dep. £3 3s.

†**Coventry T.C.**—Construction of concrete-covered service reservoir, etc., at Bredon Hill, Pershore. Binnie, Deacon and Gourley and Herbert Lapworth and Partners, Artillery House, Artillery-row, Westminster, S.W.1. Dep. £10 (payable to corporation).

DECEMBER 13.

Bacup T.C.—Roads and sewers at Huttock End No. 2 site. B.S. Dep. £2 2s.

DECEMBER 15.

Daventry R.D.C.—Laying 3,100 yds. of 9-in., 7-in. and 6-in. stoneware pipe sewers, etc. Pick, Everard, Keay and Gimson, 6, Millstone-la., Leicester. Dep. £2 2s.

†***Hereford T.C.**—Sewage disposal works. City S., Town Hall.

Hexham R.D.C.—Reinforced concrete reservoir near King's Law. C., Priestpopple House. Dep. £5.

Hexham R.D.C.—Supply, laying and jointing of approx. 4 miles of 3-in., 4-in., 6-in. and 7-in. pipes at Hexhamshire High and Middle Quarters. C., Priestpopple House, Hexham. Dep. £5

St. Thomas R.D.C.—Supply and laying of 500 yds. of 4-in., 3-in., and 1½-in. asbestos cement water mains, etc., at Christow. Ross, Hooper and Harvey, 38, Market-pl., Chippenham. Dep. £1.

Wigton R.D.C.—9,360 lin. yds. of 9-in. and 6-in. spun-iron pipes, etc., from Fletchertown to Aspatria. W. K. Rodwell, 44, Park Cross-st., Leeds 1. Dep. £3 3s.

DECEMBER 16.

Stoke-on-Trent T.C.—Roads and sewers at Newstead Industrial site, Blurton. City E. and S. Dep. £3.

DECEMBER 17.

Wetherby R.D.C.—Sewerage and sewage disposal works at three villages. W. K. Rodwell, A.M.I.C.E., B., 44, Park Cross-st., Leeds, 1. Dep. £3 3s.

DECEMBER 18.

Staffordshire Potteries Water Board.—Covered concrete reservoir at Bignall Hill. G. H. Hill and Sons (Manchester), Civil Engineers, 51, Mosley-st., Manchester 2. Dep. £5 5s.

DECEMBER 29.

Portslade-by-Sea U.D.C.—Private street works at Newtimber-dr. and Maplehurst-rd. S., 17, Station-rd. Dep. £2 2s.

DECEMBER 31.

Brixworth R.D.C.—Provision for water mains in Eastern area. Pick, Everard, Keay and Gimson, 6, Millstone-la., Leicester. Dep. £2 2s.

Sutton and Cheam T.C.—Roads and drainage works at Sutton Common-rd., site A.8. B.E. and S. Dep. £1 1s.

GENERAL BUILDING WORK

(LONDON)

Barking.—Factory Extensions.—Mr. S. E. Nevell, 53, Victoria-st., S.W.1, is the architect for factory extensions proposed by Adhesive and Allied Products, Ltd., at Highbridge-rd.

Bermondsey.—Factory.—Mr. G. W. Smith (F.) is the architect for the proposed rebuilding of a factory on White's grounds for Messrs. George Payne & Co., Ltd.

Bermondsey. — Rebuilding. — The Housing, Town Planning Committee and Estates Committee have raised no objection to an application by Messrs. Matthews & Sons to rebuild Block "D" of McCorquodale & Co.'s premises, St Thomas's-st.

Bermondsey.—Flats.—Sketch plans have been approved by the B.C. for 20 flats and one shop at Enid Estate, Block 2.

Bermondsey.—Cottages and Maisonettes.—Revised lay-out plans have been approved by the B.C. for cottages and maisonettes in St. Mary-church-st.

Bermondsey.—Baths.—Baths and Washhouses Committee are making inquiries into the question of the provision of baths and washhouses facilities for the Rotherhithe area.

Clapham.—Flats.—Plans have been prepared for two blocks of flats at Solon New-rd., S.W.4. Architects are Booth and Ledeboer, 3, Southampton-pl., W.C.1, the consulting structural engineers are Andrews, Kent & Stone, 329, High Holborn, W.C.1, and the quantity surveyors are L. C. Wakeman & Partners, 47, Bloomsbury-sq., W.C.1.

Finchley.—Homes for Old People.—Speedwell Free Churchman's Houses Society, Ltd., propose to convert into 14 flats for elderly persons Nos. 84-86, Woodside Park-rd., N.12. Architect is Miss Edna Mills (A.), Co-operative Planning, Ltd., 75b, South-side, Clapham Common.

Harlesden.—Rebuilding.—Branch shop and showrooms, High-st. and Manor Park-rd., N.W., proposed by Montague Burton, Ltd. Plans by staff architect, N. Martin (A.), Hudson-rd. Mills, Leeds.

Hornsey.—Rebuilding.—As flats of 21, Princes-ave. proposed. Plans by Hammett and Norton, 9, Genoa-ave., Putney.

Hornsey.—Rebuilding.—Nos. 66-70, Seymour-rd. proposed. Plans by H. C. Wilkerson and Partners, 18, Tooks-ct., Cursitor-st., E.C.4.

Islington.—Flats.—Tenders for the remaining 152 flats of the Sickert-ct. scheme are to be invited by the B.C. as soon as permission is received from the Minister of Health.

Lambeth. — Houses. — Ecclesiastical Commission, Millbank, S.W.1, propose 68 houses, Barrington-rd., Angell-rd., and St. James's-cres. Plans by N. F. Cachemaille-Day (F.), 1, Porthill, Hertford.

Lewisham.—Flats.—B.C. have raised no objection to an application by Mr. A. Frampton to convert Nos. 96-100, Bromley-rd. into 15 s.c. flats.

Lewisham.—Rebuilding.—B.C. have granted an application by Vigers & Co., Chartered Surveyors, 4, Fredericks-pl., E.C.2, to rebuild Nos. 175-181, South Park-cres.

Lewisham. — Rebuilding. — Higgins and Thomerson, 22, Eleven-acre-rise, Loughton, Essex, are the architects for the proposed rebuilding of 2c-10, Ewhurst-rd.

Lewisham. — Canteen Extension. — T. P. Bennett & Son (F.), 43, Bloomsbury-sq., W.C.1, are the architects for an extension for use as a canteen and kitchen at Messrs. J. W. Farmer & Sons, Ltd., premises, Courthill-rd.

Lewisham.—Dairy Premises.—The Express Co., Ltd., propose to reconstruct their premises in Wemyss-rd.

London.—Factory.—Directors of L. and D. Redman, Ltd., underwear manufacturers, 25, Corsham-st., N.1, are seeking a site for new modern factory in district where suitable labour is available.

Oxford-st.—Store Extensions.—Messrs. Pemberty's store is to be enlarged and rebuilt and a site has been acquired at the corner of Oxford-st. and Duke-st. Plans are being prepared for a building to occupy the original and the new site.

Peckham. — Rebuilding. — Of Nos. 1-21, Manaton-rd. and 68-83, Philip-rd., S.E., proposed. Architects are John Grey and Partners, 56, Oakley-st., Chelsea, and quantity surveyors are E. C. Harris and Partners, 3, Bedford-sq., W.C.1.

Portman-mews South. — Flats. — Plans by Hening and Chitty, 20, Gower-st., W.C.1, for conversion into flats of Nos. 8-11.

Shoreditch.—Flats.—Plans by Lewis Soloman & Son, 21, Bloomsbury-way, W.C.1, for seven storey shops and flats, Buckland-st.

Stepney.—Rebuilding.—Of Hughes Mansions at £100,000 proposed. Plans by B. W. Stuttle (F.), B.E. and S., Duval-st., E.1.

Teddington.—Flats and Garages.—Plans by Watkin and Piazza, 61, Clarendon-gdns., Wembley, for 16 flats and 18 garages, Anlaby-rd

Tottenham.—Flats.—Plans by V. J. Wenning (L.), 166, Devonshire-rd., Mill Hill, for 76 flats, Devon-rd. Quantity surveyors are E. C. Harris and Partners, 3, Bedford-sq., W.C.1.

Wandsworth.—Flats.—Plans by A. L. Abbott (F.), 5, Buckingham-pl., S.W.1, for 70 flats, King's-ave.

Woolwich.—Flats.—Plans by Riches and Blythin, 77, Park-la., Croydon, for block of shops and flats, Castle House site.

(PROVINCIAL)

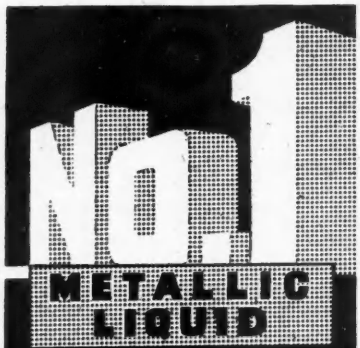
Aldershot.—Extension of warehouse by Timothy White and Taylor, Ltd., at £600,000. Plans by Chief Architect, R. A. Savage (L.), 70, Vauxhall Bridge-rd., S.W.1.

Bath.—E.C. to convert Corsham Court into School of Art. Plans by Whinney, Son and Austen Hall, 37, Norfolk-st., Strand, W.C.2.

Beckenham.—R. and A. Kohnstam, Ltd., 10, Old Bailey, E.C.4, propose extensions to factory at Randak Tannery, Elmers End.

Bedfordshire.—E.C. propose to invite tenders in 1948 for new Kingsbrook primary school, Bedford, to plans by S. C. Jury (F.), County A., Bedford. Professor A. E. Richardson, R.A., 31, Old Burlington-st., W.1, is to act as consultant in design of proposed North Beds. College of Further Education.

Birmingham.—Aston Hall to be restored at cost of £18,000 by Birmingham Museum and Art Gallery Committee. Plans by Edwin F. Reynolds (F.), 57, Colmore-row, Birmingham.



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Bollington.—W. & A. E. Sherratt, Ltd., dyers, Ingersley Vale Works, propose extensions.

Cardiff.—Civil Service Housing Association, Ltd., 20, Victoria-st., S.W.1, propose to develop for housing some 43 acres at Llanishen. Plans by T. Elvet Llewellyn, 59, Queen-st., Cardiff.

Cefn Mawr.—Monsanto Chemicals, Ltd., propose new research laboratories at £100,000.

Ches. C.C.—Approved plans for conversion of Over Hall, Winsford, into maternity home, at £13,000.

Chester.—Ches. C.C. propose staff canteen at new County Offices at £5,510.

Coventry.—Proprietors of Queen's Hotel, Hertford-st., propose rebuilding scheme.—Members of Coundon Methodist Church propose church at Coundon.

Dagenham.—B.C. propose to develop Heath Farm and Heathway Park estates by erection of blocks of flats and maisonettes. Plans by Norman and Dawbarn, 5, Gower-st., Bloomsbury, W.C.1.

Darenth, Kent.—P.A.C. recommended C.C. to carry out scheme for converting Darenth Grange into old people's home at £19,250.

Darlington.—Preliminary plans been prepared by Boro' A. for new Alderman Leach and Eastbourne Primary Schools and alterations at Salters-la. School.

Darlington.—Foster, Morland and Scotto, Ltd., to erect three-storey building at Crown-st. Architects are Clayton and Deas, High Row-chbrs., Darlington.

Eastbourne.—London House, Memorial-sq., to be converted into shops, showrooms and offices. Plans by H. Hubbard Ford (A.), 24, Cornfield-rd., Eastbourne.

Essex.—C.C. propose to carry out alterations, additions and repairs at St. George's Hospital at £28,000.

Folkestone.—Kent C.C. acquired Ash Eton School for adaptation as nurses' home, physiotherapy department and maternity unit for Royal Victoria Hospital.

Gillingham.—Currys, Ltd., 77, Uxbridge-rd., W.5, to rebuild shop and showrooms at 110, High-st. Plans by Braven and Cubitt (AA.), 430, Strand, W.C.2.

Glusburn.—West Riding E.C. propose school on allotments site.

Gosforth (Northumberland).—Plans being prepared for erection of offices for Thomas Hedley & Co., Ltd., Collingwood-st., Newcastle-on-Tyne. The staff architect is S. Burn, Thomas Hedley & Co., Ltd., Manufacturing Headquarters, City-rd., Newcastle-on-Tyne.

Haverhill (Suffolk).—Development of estate by erection of 500 houses proposed by Haverhill and District Housing Association. Plans by Co-operative Planning, Ltd., 75b, South-side, Clapham Common, S.W.4.

Hornchurch.—Essex War Agricultural Committee to submit scheme for erection of 122 houses for agricultural workers to M.H. for approval.

Hoylake.—Cheshire C.C. propose to establish maternity hostel.

Leigh.—Lancs E.C. propose extensions at technical college.

Macclesfield.—Rev. Fr. H. R. Kelly, P.P., St. Albans, Chester-rd., proposes R.C. Secondary school.

Manchester.—T.C. approved:—Alterations to factory at William-st. and Lower Russell-st., Miles Platting, for J. H. Peck & Co., Ltd.; clay works for brick making at Mitchell-st., Newton Heath, for J. A. Jackson, Ltd., East-rd., Ardwick; paint store and office block at High-st., Gorton, for J. Johnson (T. H. Rowbotham, architect, Forge-st., Whaley Bridge); light engineering works at Bradnor-rd., Northenden, for F. K. Kay (Engineers), Ltd. (Archand, Worrow & Dyer (AA.), architects, 20, Lowndes-st., Knightsbridge, London, S.W.1).

Mansfield.—W. R. White proposes warehouse at Commercial-st.

Mossley.—T.C. propose developing site at Hollins for housing estate.

Newcastle.—Dining rooms and kitchen are to be erected at Dame Allan School. Plans by Cackett, Burns Dick and McKellar, 21, Ellison-pl., Newcastle.

Newcastle.—Store buildings to be erected at St. Andrew's-st. for G. K. Carnegie & Co., fruit merchants. Plans by Morton McKenzie, Mosley-st., Newcastle.

Plymouth.—B.C. considering development for housing of Whitleigh estate. Plans by E. G. Catchpole (A.), Weston Lodge, Seymour-rd., Plymouth.

Pwllheli.—J. O. Hughes, of Caernarvon, proposes dry-cleaning works at Seiont Mills.

Rayleigh (Essex).—U.D.C. agreed in principle to erect 33 houses for agricultural workers.

Rochdale.—T.C. approved:—Day nursery at works, Whitworth-rd., for J. Bright & Bros., Ltd.; additions to Mars Mill, Lancashire Cotton Corporation, Ltd.; additions to works, Crawford-st., Petrie & McNaught, Ltd.; offices, Smith-st., Corporation Transport Committee; day nursery at works, Roch-st., Dale Mill, Ltd.—E.C. propose school canteen at Heyhead.

Romford.—S. W. Adams, Ltd., 7, Market-pl., Romford, propose new showroom, etc., at Market-pl. Plans by F. P. French, 46, Balgores-la., Romford, Essex.

Saffron Walden.—R.D.C. applied to M.H. for permission to erect 422 houses for agricultural workers.

Salford.—T.C. approved additions to Bridge Paper Mills, Holland-st., Pendleton, R. H. Brand & Co., Ltd.

Scarborough.—North Riding E.C. propose Primary County school on Newby estate.

Stockport.—F. Ingham proposes garage and filling station and lock-up garages at Harwood-rd., Heaton Mersey.—Isaac Pearson, Ltd., propose alterations to works at Newbridge-la., Tyresoles, Ltd., propose alterations to works at Buckingham-rd., Heaton Chapel.—E.C. propose Primary school at Hempshaw-la.

Stretford.—T.C. approved:—Extensions to workshop at Tennis-st. for J. & H. Patteson, Ltd.; additions to factory at Stanley-rd. for Danish Bacon Co., Ltd.; workshop at Chester-rd., Cornbrook, for R. McCaslin & Son, Ltd.—T.C. propose rebuilding and extension of public library, King-st., at £13,000.

Sunderland.—Transport Manager (C. A. Hopkins) and the B.E. (J. E. Lewis) prepared scheme for erection of two garages and depot for transport undertaking at £386,000.

Swinton.—Lancs E.C. propose central kitchen at Stamford-rd. and adapting Stamford Institute for dining-rooms.

Thringstone (Leics.).—East Midlands Housing Association propose to carry out housing scheme. Plans by Co-operative Planning, Ltd., 73b, South Side, Clapham Common, S.W.4.

Torquay.—Plans prepared by Edward Narracott (A.), 48 Torwood-rd., Torquay, for block of 16 flats at rear of Apsley Hotel, Meadfoot-rd.

Urmston.—U.D.C. approved:—Additions to works at Mellors-rd., Trafford Park, for F. Smith & Co.; extensions to works at Woodsend-rd., Flixton, for Pybus Bros.

Walsall.—Watch Committee propose conversion of premises at Lichfield-st. for police hostel at £5,443.

Watford.—Hillingdon Estate Co., 29, Peterborough-rd., Watford, propose to erect 29 houses at Hillingdon-rd.

Watford.—Plans being considered for conversion into paraplegic settlement of Kytes estate, Garston. Plans by Norman & Dawbarn, 5, Gower-st., W.C.1.

West Bromwich.—T.C. approved factory at West Walsall-rd. for Woodward Products, Ltd.

West Sussex.—E.C. propose new Junior and Infants' school at West Wittering at £31,700. Plans by F. R. Steele (F.), County Offices, Chichester.

Wirksworth.—U.D.C. approved:—Extensions to Hopton Wood Stone Works for Derbyshire Stone, Ltd., Buxton; extensions to Haarlem Mills for G. H. Wheatcroft & Co., Ltd.

Wolverhampton.—Staffordshire C.C. Mental Hospitals Board propose mental hospital at Seisdon.

Worthing.—Plans approved for development for housing of Field Place estate, The Strand and Boulevard. Architect is D. J. Read, 610, Christchurch-rd., Boscombe, Bournemouth.

CORRECTION.

Hollingbourn R.D.C. have now let contracts for a total of 185 houses of which 154 are under construction and 12 have been occupied. The R.D.C. contemplate developing further housing sites when M.H. approval is received to invite tenders. Applications to tender for any work required in the area should be addressed to the council's architects, Lawrence Farman and Partners, 42, Richmond Park-rd., London, S.W.14, or at 1, Middle-row, Maidstone, Kent.

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Barmouth.—32 "Airey" houses, for U.D.C.: *W. J. Griffiths & Son, Barmouth.

Beverley.—16 houses at Tickton, for R.D.C. G. Palfreyman, architect, 36, Market-pl., Beverley: *P. R. Gilkatt, South Cave, E. Yorks.

Bicester, Oxon.—Conversion of Market End House into 18 flats, for U.D.C.: *T. H. Kingerlee & Son, 35, Queen-st, Oxford, £11,497 (subject to M.H. approval).

Bideford.—Eight "Airey" houses at Buckland Brewer, for R.D.C.: *Devon Contractors, Ltd., Haven-rd., Exeter, £12,021.

Bromsgrove.—12 houses, Bentley, Dusthouse-la., Tardebigge, and at Frankley-green, for R.D.C. H. T. W. Gough (L.), architect, 45, Newhall-st., Birmingham: (8) *Harrison Porritt, Ltd., Greenlands Estate, Redditch, £10,355; (4) *W. Tilt & Sons, Sunset-view, Hunnington, Halesowen, £4,960.

Bury.—12 houses at Fairfield No. 2 site, for T.C. J. Chadwick, B.E., Municipal Offices, 28, Bank-st.: *F. Holland (Whitefield), Ltd., Bank-st., Whitefield, nr. Manchester, £14,750.

Cardiff.—Factory at Penarth-rd., for Stone & Co., Ltd. Yorke, Rosenberg & Mardell, architects, 35, Welbeck-st., W.1. Building: *J. L. Kier & Co., Ltd., 7, Lygon-pl., Grosvenor-gdns., S.W.1; piling: *Cementation Co., Ltd., Bentley Works, Doncaster; steelwork: *Boulton & Paul, Ltd., Norwich.

Chipping Norton.—"Airey" houses, for R.D.C. 18 houses and site works at Middle Barton, and 12 houses with site works at Leafield: *Hinkins & Frewin, Banbury, £32,617 and £22,148; 12 houses and site works at Kingham and eight houses with site works at Ascott-under-Wychwood: *Alfred Groves & Sons, Ltd., Milton-under-Wychwood, £22,311 and £13,645 (all subject to M.H. approval).

Coventry.—Reinstatement of Hill Farm School, for E.C. D. E. E. Gibson (A.), architect, 1a, Warwick-row, Coventry: *H. Darbyshire & Son, Burnsall-rd., Coventry, £13,445.

Croydon.—Superstructure for switch house for new generating station, for B.C.: *Sir Robert McAlpine & Sons, Ltd., 80, Park-la., W.1. (£20,000 estimated cost.)

Elham.—8 Airey houses at Lyminge and 6 at Hawkinge, for R.D.C. Willan & Stewart, 127, Sandgate-rd., Folkestone, architects: *Douglas Castle, Cheriton-rd., Folkestone, £19,022.

Hebburn.—Machine shop at New Town Works of A. Reyrolle & Co., Ltd. Architects: Cackett, Burns Dick & McKellar, 21, Ellison-pl., Newcastle-on-Tyne: *A. Anderson (Contractors), Ltd., Stanmore-rd., Newcastle-on-Tyne.

Hull.—Rebuilding factory and offices at St. Andrew's Dock, for Lord Line, Ltd. John Watson & Carter, architects, Cogan-chbrs., Bowalley-la., Hull: *Fenner, Panton & Co., Ltd., Londesborough-st., Hull.

Limerick.—138 houses at Ballinacurra Weston, for T.C.: *Murphy Bros., Cork, £183,089 (subject to Ministry approval).

L.C.C.—Contracts exceeding £2,500 in value placed by L.C.C. during period ended November 19, 1947. Erection of a typical single-storey school in light construction with addenda bills for (a) extra items for a two-storey building, and (b) various site and reinstatement works to a schoolkeeper's house: William Harbrow, Ltd., Rotherhithe.

London.—Reinstatement of premises at Victoria Docks, Silvertown, E., for Joseph Rank, Ltd., 107, Leadenhall-st., E.C. T. P. Bennett & Son, architects, 43, Bloomsbury-sq., W.C.1: *Sir Robert McAlpine & Sons (London), Ltd., 80, Park-la., W.1.

¶London (Admiralty).—*Coventry*, Gunnery Equipment Depot. Repairs to concrete floors, J. Daniels, 7, Russell-st., Coventry.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended November 22:—*Heating and hot water installation*: G. N. Haden & Sons, Ltd., London, W.C.1; W. H. Gascoigne & Co., Ltd., London, W.6. *Relagging heating installation*: Bernard Hastie & Co., Ltd., Swansea. *Building work*: Hadsphaltic Construction Co., Ltd., London, E.C.3. *Conversion of huts*: A. C. Billings & Sons, Ltd., Cheltenham, Glos. *Roofing work*: Geo. M. Carter (Erectors), Ltd., London, S.W.1.

¶London (M.O.W.).—Contracts placed by M.O.W. for week ending November 20.

London: Whitehall Area, London, S.W., Royal Wedding, general decorations, John Mowlem & Co., Ltd., 91, Ebury Bridge-rd., S.W.1; I.R.O., Eastnor House, Blackheath, S.E., alterations, Grant & Partners, 1, Manor Park-parade, Lee High-rd., S.E.13; St. James's Palace, S.W.1, conversion to apartment No. 30, F. G. Minter (Decorators), Ltd., 4, Buckingham-gate, S.W.1 *Ayrshire*: New Cumnock Bank, Junior Secondary School, temporary classrooms, Alexander Bros., 12, Maxwood-rd., Galston, Ayr. *Berks*: Main Effluent Discharge Pump House, A.E.R.E., Harwell, supply, delivery and erection of pumping equipment, Gwynnes Pumps, Ltd., 62-64, Chancellor's-rd., W.6. *Cambs*: Chesterton Senior School, Cambridge, kitchen and dining-room, Coulson & Son, Ltd., 37, St. Andrew's-st., Cambridge; Berwick Council School and Whittlesey Turves Council School, kitchen and dining-room, B. Stokeley, 2, Henry-st., Peterborough; Wimblington School, Manea School, Doddington School, kitchens and dining-rooms, H. C. James, Ltd., 183, High Town-rd., Luton, Beds; Whittlesey Boys' and Girls' Schools, Cambs, additional classrooms, B. Stokeley, 2, Henry-st., Peterborough. *Carmarthenshire*: County School, Carmarthen, kitchen and dining-room, Glyn Davies, Gwelfor, New-st., Kidwelly. *Derbys.*: M.N.I., 48-50, High-st., Long Eaton, Derby, adaptation, Ford & Weston, Ltd., Osmaston-rd., Derby *Essex*: Gt. Wakering Primary School, temporary classrooms, J. C. Flaxmant & Sons, Ltd., 114, Southchurch-rd., Southend-on-Sea. *Fifeshire*: Miners' Hostel, Cowdenbeath, additions and alterations, John Best (Edin.), Ltd., 304, High-st., Kirkcaldy. *Glam.*: Employment Exchange, Cardiff, electric lifts, Waygood-Otis, Ltd., Falmouth-rd., London, S.E.1; Cornelly School, Pyle, kitchen and dining-room, Wilsons (Bridgend), Ltd., 70a, Nolton-st., Bridgend; Seven Sisters School, kitchen and dining-room, Rogers & Davies, Humphrey-st. Yard, Swansea. *Glouces.*: M/E Schools Programme, 26, buildings within the Bristol area, laying pitch mastic flooring Highways Construction, Ltd., Iddlesleigh House, Caxton-st., S.W.1. *Hampshire*: I.C.T. Laboratory, N.G.T.E., Pyestock, Hants, erection and extension, James Longley & Co., Ltd., Crawley, Sussex; Blocks A, F and G and new Boiler House, M/Health Emergency Hospital, Alton, Hants, alterations and additions, A. J. Dunning & Sons, Ltd., Weyhill, Andover, Hants. *Lancs*: Meanwood School, Rochdale, kitchen and dining-room, Jones & Craig, 11, Brookleigh-rd., Withington; Stoneyhulme School, Burnley, kitchen and dining-room, W. Grindlay, Ltd., Grand-bldgs., Rawtenstall, Rossendale. *Leics*: Westfield County Boys' School, Hinckley, temporary building, Bowles & Son, Gladstone-st., Leicester.

Lincs: North Sea Camp, Frieston, Lincs, temporary houses, roadworks and sewage disposal works, J. T. Barber & Son, 40, Hessle-ave., Boston, Lincs. *Middx.*: Wormwood Scrubs Prison, removal of A.R.P., John Mowlem & Co., Ltd., 91, Ebury Bridge-rd., S.W.1; P.O. Factory, Horsenden-la., Perivale, alterations and additions, George Moss (London), Ltd., Dorchester-rd., Northolt Park, Middx. *Midlothian*: Hyvots Bank, Gilmerton, site works and Tarran houses, George Wimpey & Co., Ltd., 37, Drumsheugh-gdns., Edinburgh. *Monmouthshire*: Tredegar, U.D.C., site for houses, Rees Edwards, Derwen-bldgs., Commercial-st., Tredegar. *Norfolk*: Sheringham School, kitchen and dining-room, H. Bullen & Sons, Ltd., Central-rd., Cromer, Norfolk. *Northamptonshire*: Tennyson-rd. School, Rushden, temporary buildings, A. P. Lewis & Sons, Ltd., Duke-st., Burton Latimer, Kettering. *Northumberland*: Telephone Repeater Station, Kenton, Newcastle/Tyne, alterations to power and battery room, Ralph Bowey & Son, Ltd., Back Raby-st., Newcastle-on-Tyne. *Shropshire*: Pool Hill School, Dawley, temporary building, Rush & Tompkins, Ltd., 270, Corporation-st., Birmingham; Harlescott School, Featherbed-la., Shrewsbury, erection temporary building, W. Higley & Son, 8, Pride Hill-chbrs., Shrewsbury. *Staffs*: M.N.I. Balls Premises, Tentine-sq., Hanley, Stoke-on-Trent, adaptations, George Ellis, High-st., Hanley, Stoke-on-Trent. *Surrey*: A.T.X., Bagshot, erection of A.T.X., E. C. Hughes, Ltd., Albion Works, Wokingham, Berks. *West Lothian*: Broxburn High School, temporary classrooms, Wm. Sprunt & Co., Ltd., Inverallam-rd., Bridge of Allan, Perth. *Yorks*: Elloughton County Primary School, nr. Hull, kitchen and dining-room, Houghton & Grant, Ltd., 71-73, Beverley-rd., Hull; Queen-st. School and Altofts Church-rd. Infants' School, kitchen and dining-rooms, J. H. Thorpe & Son, Ltd., Grove House, Church-la., Normanton. *Zetland shire*: Hamnavoe Public School, temporary classrooms, J. Smith & Son, West Shore, Scalloway, Zetland; Scalloway Public School, temporary classrooms, J. Smith & Son, West Shore, Scalloway, Zetland; Sandwich Public School, temporary classrooms, A. Irvine & Sons, Fort-rd., Lerwick, Zetland; Happyhansel Public School, temporary classrooms, A. Irvine & Sons, Fort-rd., Lerwick, Zetland; Aith Public School, Bixter, temporary classrooms, Wm. Dale & Son, Ltd., 28, Commercial-rd., Lerwick, Zetland; Urafirth Public School, Heylor, temporary classrooms, Wm. Dale & Son, Ltd., 28, Commercial-rd., Lerwick, Zetland.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended November 15: *Essex*: Painting, S. Lupton & Sons, London, S.W.1. *Hampshire*: Alterations to heating installations, The Hobdell Engineering Co., Ltd., London, S.W.1. *London, S.W.1*: Building repairs, Gorham (Contractors), Ltd., Goring by Sea, Sussex.

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Manchester.—Electrical installation to 50 Orlit houses at Wythenshawe: *Alpha Manufacturing & Electrical Co., Ltd., 21, Cedars-rd., Clapham, London, S.W.4.

Manchester.—Three houses at Cringle-rd., Levenshulme: *B. B. Bender, 7, Queensway, Didsbury, Manchester.

Manchester.—Offices to works at Cornbrook-rd., Cornbrook, for Lime-Sand Mortar Co., Ltd.: *Russell Building & Contracting Co., Ltd., 165, Plymouth-gr., Chorlton-upon-Medlock, Manchester.

Manchester.—Workshop, rear of 990, Burnage-la., Burnage, for J. L. Wood & Son: *A. C. Curphey, 102, School-la., Didsbury, Manchester.

Newcastle-on-Tyne.—Garage and workshop at Welbeck-rd., for Saddler Bros., builders, Welbeck-rd.: *Direct Labour.

Newton Abbott.—Canteen kitchen and dining-room at Newton Abbott Grammar School, for Devon E.C.: *E. Lee (Torquay), Ltd., £4,238.

Northamptonshire.—School canteens at Corby Modern Boys' and Girls' schools, for E.C. J. Perkins (L.), County A., County Hall, Northampton: *A. Tailby & Son, Ltd., 20, Station-rd., Desborough, nr. Kettering.

Norwich.—Erection of Marl Pit-la. Primary school, for E.C. L. G. Hannford (F.), City Hall, Norwich: *Education Department's Works, £80,278.

Oxford.—Extension of Physics Laboratory, Parks-rd., for University of Oxford. Lanchester & Lodge (FF.), architects, 10, Woburn-sq., W.C.1: *Benfield & Loxley, Ltd., 106, Bullingham-rd., Oxford.

Pewsey.—Two houses at Everleigh, for R.D.C.: *W. J. New, Collingbourne, £2,690.

Ploughley, Oxon.—11 pairs of "Airey" houses at Launton, for R.D.C.: *Victor Wilson, Ltd., £31,020.

Rochdale.—Structural alterations at Foxholes House, for conversion into training school for nurses, for Birch Hill Hospital, for T.C. S. H. Morgan, B.S.: *G. Margolis & Co., 28, Heywood-st., Cheetham, Manchester.

Ruthin.—Six houses at Llanarmon, four at Graianrhyd and 10 at Erryrys, for R.D.C.: *Salisbury & Peel, Llandudno, £9,069, £6,607 and £14,823.

Scottish Special Housing Association, Ltd.—Contracts placed (a) Site Preparation, Forth, Lanarkshire, 18 Traditional houses, County Road S., Hamilton, road work. Forth, Lanarkshire, 18 Traditional houses, Murdoch Mackenzie, Ltd., Wilson-st., Hamilton, construction of sewers, etc. (b) Erection of Houses. Mossside, Cowdenbeath, 20 Traditional houses, Fife Electric Power Co., East Port, Dunfermline, electric service cable. Oakley, Fife, 150 Weir "Quality" houses, B. Reynolds & Sons, Ltd., Stirling, foundation and site work. Townhead, Coatbridge, 64 Weir "Quality" houses, Thos. Coats (Plumbers), Ltd., Motherwell, supplying and laying as service pipes. Danderhall, Midlothian, Electricity Dept., Edinburgh Corporation, electricity services.

Skegness.—20 houses at Church-la., Winthorpe, for T.C.: *Direct Labour.

Stockton-on-Tees.—22 "Airey" houses at Fairfield Estate, for T.C. Plans by Boro' A., 124, High-st., Stockton: *Direct Labour.

Stockton-on-Tees.—Office accommodation at Thistle Green, for Boro' A. Dept.: *Direct Labour, £5,061.

Stretford.—20 houses at Moss Park estate, for T.C. A. H. Perry, B.E., Town Hall, Talbot-rd.: *Smith & Allcock, Ltd., 471, Chester-rd., Cornbrook, Manchester.

Tees Conservancy Commissioners.—Two reinforced concrete jetties, Teesport. Rendel, Palmer & Tritton, 55, Broadway, Westminster, S.W.1: *The Cleveland Bridge & Engineering Co., Ltd., Darlington, £199,996.

Walsall.—Extension of Walsall Electricity Station, for West Midlands Joint Electricity Authority, Phœnix-bldgs., Dudley-rd., Wolverhampton. L. F. Jeffrey, B.Sc., M.I.C.E., chief engineer: *Sir Alfred McAlpine & Sons, Ltd., Hooton-rd., Hooton, Ches.

Wolverhampton.—Municipal schools at Bushbury Estate South, for E.C. W. M. Law, B.E.: *William Whittingham, Powlett-st., Wolverhampton, £66,971.

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